

**School of Media, Culture and Creative Arts  
Department of Internet Studies**

**Online Tools in Teaching and Learning and the Problem of 'Web 2.0': A  
Case Study of an Information Studies Department, Oman**

**Salim Said Ali Al Kindi**

**This thesis is presented for the Degree of  
Doctor of Philosophy  
of  
Curtin University**

**May 2014**

## Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university

## Abstract

There have been many research studies of the development and significance of various online tools, commonly grouped together under the term 'Web 2.0'. However, few of these studies have specifically focused on the use of these tools and technologies in the Gulf Cooperation Council (GCC), particularly Oman, though there have been broader studies by some researchers of this geo-political region's adoption of the internet. This study addresses this deficit, focusing on the role of online tools in university education within Oman and using as a case study the online tools in the teaching and learning practices of Information Studies Department (ISD). In doing so, the study will also contribute to the growing research into online tools and education.

The methodology selected for this study is a combination of qualitative and quantitative techniques, consisting of three stages: semi-structured face-to-face interviews, which were conducted with academics and training supervisors at the Department of Information Studies (DIS) in Oman; an online survey of 173 students at DIS; and two case studies -- which were driven by the qualitative data that was collected during the face-to-face interviews and online observation -- involving two academics interviewed in "Stage 1" who teach or have experience teaching a course using online tools such as blogs and LinkedIn; and, finally, a group of ten students as well as a PhD student who has completed an online course. Data from three stages -- interviews, the survey and case studies -- are triangulated producing greater insight and discussion regarding the attitude of academics and students towards the use of various online tools in education. The results of three stages are considered as a basis of comparison with other studies in Western and Arabic society and with statistical data from multiple sources.

The results from this study indicate a lack of any agreed definition of 'Web 2.0', which affects the academic community, and furthers existing studies demonstrating that 'Web 2.0' does not function as a consistent term. The study found a high level of awareness and use of various online tools among the academic community. Three important factors were contributed to increase in the level of knowledge and use of

these tools in Oman which are: the availability of communication and smart devices such as smartphones; the related reorganisation of society and changes in social culture; and the characteristics and features of these tools. The academic community has a high regard for the use of various online tools in education; however, few educators choose to use these tools in their teaching practice. Three factors as to why so few of the academics choose to use these tools in their teaching practice were found (1) heavy workloads, combined with a lack of internet services; (2) concern about a lack of control of online tools content due to a lack of ownership; and (3) the use of other e-learning platforms such as Learning Management Systems and Moodle, which may impede use of various online tools. The study also found three different activities which are widely practiced among academics: (1) resources and information sharing, including sharing ideas, questions, articles, and links and finding information; (2) posting assignments for students; and (3) using these tools as platforms for discussion. Few academics use these tools for the purposes of scholarly communication and collaborative research, or enhancing their networked self. Findings also uncovered differential academic community attitudes towards these tools along lines including accessibility and flexibility; communication using an open platform; and the ability to give the students the ability to manage personal learning experiences. The results from survey also indicate gender differences on use of these tools particularly in the level of Facebook use. The triangulated results uncovered issues of privacy and security on the internet, and internet speed, were given significant attention by respondents in this study.

**Keywords:** Online tools, Web 2.0, Social media, ELearning, Moodle, LMS, Library and Information Sciences, SQU, Oman, Gulf Cooperation Council.

## Acknowledgments

I would like to express my gratitude to my *God (Allah)*, the most gracious, most merciful, all the praises and thanks to him, for providing me the ability to complete my thesis.

I wish to extend my deep thanks to my thesis committee:

**Dr Tama Leaver:** for his invaluable support, and for a great guidance during my PhD. I highly appreciate all your support and assistance with my doctoral research.

**Associate Professor Paul Genoni:** for his valuable assistance and for being a great mentor during this whole process. Thank you for your feedback and support.

**Associate Professor Michele Willson:** for her valuable assistance during this whole process. Thank you for your guidance, and continuous emotional support.

I am extremely grateful for **Professor Matthew Allen**, for his advice, support and guidance in this work. Thank you for your guidance, encouragement and continuous support during this whole process.

I wish to extend my deep thanks to all faculty and staff members from the Department of Information Studies at Sultan Qaboos University in Oman for their assistance and support. Special thanks to Dr. Mohammed Al Suqri, Abdullah Al Sarmi and Dr. Ali Saif Al Aufi.

I am also extremely grateful for Dr. Ali Mahdi Kazem, Dr. Abdulhameed Said Hassan, Dr. Fayez Abdel Majed Al Simadi and Dr. Emad Farouk Saleh for their statistical support, review and advice regarding data.

I would like to thank the editor, Helen Mumme for proofreading of my thesis.

I am also grateful and thankful for my dear friends, Mohammed al-Jabri, Ali Al-Bermani, Salim al-Jabri, Hesan Al-Balushi and Awf Al-Khan for their encouragement.

I gratefully dedicate this thesis to my father (Said) and mother (Khareeba), for encouraging me and calling me every week, I really miss them in this long eventful journey. I also want to thank my brothers: Jaber, Sultan, Saif, Ali, Hemad and Abdullah, and my sisters: Naeema, Hamda and Mooza who look after my kids every day while I'm doing my PhD in Australia.

Lastly, but most importantly, I would like to thank my beloved wife "Raya", thanks for believing in me and for being patient and waiting for me to finish my thesis. I'm sorry for being away for such a long time. My son, Al-Khattab and My daughter, Aisha, I apologise, I could not spend much time with you in Oman, but I did this for you.

Thanks for everyone who helped me in completing my thesis

## Conference/Journal papers published during my PhD studies

1. **Al kindi, S. S.,** & Al-Suqri, M. N. (2012). Social Networking Sites as Marketing and Outreach Tools in Information Institutions and the Role of the User in the Marketing Process. *Iraq academic scientific Journal, (IASJ)*, 13, (1/2), 47-80 (in Arabic).
2. **Al kindi, S. S.,** & Al-Suqri, M. N. (2013). Social Networking Sites as Marketing and Outreach Tools of Library and Information Services. *Global Journal of Human Social Science Research (GJHSS)*, 13 (2), 1-14.
3. **Al kindi, S. S.,** & Al hashmi, S. M. (2012). Use of Social Networking Sites Among Shinas College of Technology Students in Oman. *Journal of Information & Knowledge Management*, 11(1), p. 1-9.
4. **Al Kindi, S. S.,** Al-Suqri, M. N., & Al-Sarmi, A. H. (2014). The Use of Online Tools by Librarians and Information Professionals in Medical Libraries in Oman (Manuscript submitted for publication)
5. **Al kindi, S. S.,** & Al-Suqri, M. N. (2013). Investigating Faculty Decisions to Adopt Social Networking Sites (SNSs): The Case of Sultan Qaboos University in Oman. *International Research*, 3(4). 687-704. Retrieved from [http://irjlis.com/wp-content/uploads/2013/12/8\\_IR155.pdf](http://irjlis.com/wp-content/uploads/2013/12/8_IR155.pdf)
6. Al-Suqri, M. N., **Al-Kindi, S. S.,** & Al-Sarmi, A. H. (2013). Development of the New Information Industries in the Middle East: The Risks and Opportunities for the Field of Library and Information Science in Oman. IFLA LIS Education in Developing Countries Special Interest Group (SIG), “The Future of LIS Education in Developing Countries: The Road Ahead” Satellite Meeting – Singapore Wednesday, August 14, 2013.

## List of Acronyms and Abbreviations

<i>ASMR</i>	<i>Arab Social Media Report</i>
<i>CET</i>	<i>Centre for Educational Technology</i>
<i>CIS</i>	<i>Centre for Information Systems</i>
<i>DIS</i>	<i>Department of Information Studies</i>
<i>FB</i>	<i>Foundation Program</i>
<i>GCC</i>	<i>Gulf Cooperation Council</i>
<i>ICT</i>	<i>Information and Communication Technology</i>
<i>IS</i>	<i>Information Studies</i>
<i>ISD</i>	<i>Information studies Department</i>
<i>IT</i>	<i>Information Technology</i>
<i>ITU</i>	<i>International Telecommunication Union</i>
<i>KSA</i>	<i>Kingdom of Saudi Arabia</i>
<i>LIS</i>	<i>Library and Information Sciences</i>
<i>LISDs</i>	<i>Library and Information Sciences Departments</i>
<i>LMSs</i>	<i>Learning Management Systems</i>
<i>Omantel</i>	<i>Oman Telecommunication Company</i>
<i>PLE</i>	<i>Personal Learning Environment</i>
<i>RSS</i>	<i>Really Simple Syndication</i>
<i>SMS</i>	<i>Short Message Service</i>
<i>SNSs</i>	<i>Social Networking Sites</i>
<i>SQU</i>	<i>Sultan Qaboos University</i>
<i>SPSS</i>	<i>Statistical Package for Social Sciences</i>
<i>SST</i>	<i>Social Shaping of Technology</i>
<i>TRA</i>	<i>Telecommunications Regulatory Authority</i>
<i>UAE</i>	<i>United Arab Emirates</i>
<i>UGC</i>	<i>User-generated content</i>
<i>UN-ESCWA</i>	<i>United Nations Economic and Social Commission for Western Asia</i>



## Clarification

*The term “internet’: in this thesis, spell it with a lower case “i”, in order to be consistent with current trends in different disciplines. The reason for this as Markham and Baym (2009) pointed that “capitalizing suggests that “internet” is a proper noun and implies either that it is a being, like Nancy or Annette, or that it is a specific place, like Madison or Lawrence” (see Markham and Baym, 2009).*

## Table of Content

<b>Declaration.....</b>	<b>I</b>
<b>Abstract.....</b>	<b>II</b>
<b>Acknowledgments.....</b>	<b>IV</b>
<b>Conference/Journal papers published during my PhD studies .....</b>	<b>VI</b>
<b>List of Acronyms and Abbreviations.....</b>	<b>VII</b>
<b>Clarification.....</b>	<b>VIII</b>
<b>Table of Content.....</b>	<b>IX</b>
<b>List of Tables.....</b>	<b>XVI</b>
<b>List of Figures.....</b>	<b>XIX</b>
<b>Chapter 1 Introduction</b>	
1.1 Introduction.....	1
1.2 Statement of the Problem.....	3
1.3 Objectives and Research Question.....	7
1.4 Significance of the Study.....	8
1.5 Organization of the Study.....	9
<b>Chapter 2 Research Background</b>	
2.1 Introduction.....	14
2.2 Gulf Cooperation Council – General Background.....	14
2.3 The General Picture of the Internet in the GCC.....	17
2.4 Women and ICT Education in the GCC.....	21
2.5 Sultanate of Oman.....	23
2.5.1 Oman: General Background.....	23
2.5.2 ICT and the Internet in Oman.....	24
2.5.3 Higher Education in Oman.....	28
2.5.4 Sultan Qaboos University.....	30
2.6 Information Studies Department.....	33
2.6.1 Information Studies Departments in the Arab World and GCC.....	33
2.6.2 Information Studies Department in Oman.....	34
2.7 Online Tools Growth and Developments in the Arab world.....	38
<b>Chapter 3 Review of the Literature</b>	
3.1 Introduction.....	44
3.2 The Problem of ‘Web 2.0’ .....	45
3.2.1 The label ‘Web 2.0’.....	45

3.2.2 The Idea of Web Categorization and Cultural Practices.....	51
3.3 Online Tools as Open Platform for Graduates versus LMS.....	56
3.4 Online Tools in Three Contexts.....	61
3.4.1 Online Tools for Personal Purposes.....	61
3.4.2 Online Tools for Teaching and Learning.....	62
3.4.2.1 Academic Community Knowledge of Online Tools.....	62
3.4.2.2 Communication and Collaborative Learning within Online Tools.....	66
3.4.2.3 Online Tools within a Curriculum and Teaching Practice...	69
3.4.3 Online Tools for Professional Uses and Research, and the Networked self.....	71
3.5 Online Tools and LIS Education.....	74
3.5.1 Online Tools with LIS Curriculum.....	74
3.5.2 Online Tools in Library and Information Workplaces.....	77
3.6 Challenges and Barriers for Utilising Online Tools.....	78
3.7 Social Shaping of Technology (SST).....	82
3.8 Gender and Online Tools.....	84
3.9 Online Tools in Education in the GCC: Opportunities and Challenges.....	90
<b>Chapter 4 Research Methodology</b>	
4.1 Research Design and Instrumentation.....	95
4.1.1 Research Design.....	95
4.1.2 Chosen Sampling/Population.....	100
4.1.3 Ethical Considerations and Data Storage.....	101
4.1.4 Reliability and Trustworthiness.....	102
4.2 Interviews	
4.2.1 Interview Design.....	102
4.2.2 Major Questions.....	105
4.2.3 Face to Face Interview: Advantages and Disadvantages.....	106
4.2.4 Population and Sampling.....	107
4.2.5 Data Collection.....	107
4.2.6 Data Analysis.....	110
4.3 Questionnaire/Online Survey	
4.3.1 Questionnaire Design.....	111
4.3.2 Initial Investigation and Consideration.....	112
4.3.3 Questionnaire Content.....	113

4.3.4 Pilot Questionnaire and Online Design.....	114
4.3.5 Population and Sampling.....	116
4.3.6 Data Collection.....	116
4.3.7 Questionnaire Analysis.....	117
4.4 The Case Studies	
4.4.1 Design of the Case Studies.....	118
4.4.2 Procedures and Content of Case Studies.....	191
4.4.2.1 Case One: Interviewing an academic and small group of students.....	119
4.4.2.2 Case Two: Online Class observations and interviews.....	120
4.4.3 Population and Sampling.....	121
4.4.4 Data Collection.....	122
4.4.5 Case Studies Analysis.....	123
<b>Chapter 5 Interview Findings</b>	
5.1 Introduction.....	124
5.2 Demographic Information.....	124
5.3 Internet and Educational Technologies .....	125
5.3.1 General Depiction of Internet Use.....	125
5.3.1.1 Personal Use.....	125
5.3.1.2 Development of Research and Professional Use.....	126
5.3.1.3 Educational Use.....	128
5.3.1.4 Perception of the Internet.....	130
5.3.2 Educational Technologies (LMS).....	131
5.3.2.1 The Rising Popularity of Moodle in Teaching.....	131
5.3.2.2 Limitation of Using Moodle.....	132
5.3.2.3 Academics' Perception of Moodle.....	133
5.3.2.4 Academics Views about Student Participation and Interaction.....	134
5.4 Choosing and Using Online Tools within a Curriculum.....	135
5.4.1 Level of Academics Knowledge of Online Tools.....	136
5.4.2 Using Online Tools in Personal Uses- Social Communication.....	137
5.4.3 Online Tools in Professional Uses and Research, and the Networked self.....	138
5.4.4 Academics' Attitude Towards Using Online Tools in Education.....	140
5.4.4.1 Discussion Platform and Resources Sharing.....	140

5.4.4.2 An Attitude More Than Technological Proficiency.....	143
5.4.4.3 Internal and External Collaborative Work.....	143
5.4.4.4 Communication and Collaborative Learning.....	145
5.4.4.5 Changing Nature of Communication in Society.....	146
5.4.4.6 Acquiring Additional Skills to a Student's Future Employment.....	147
5.4.4.7 Learning Outcomes and Self-Development.....	148
5.4.4.8 Academics' Attitude to the Form of Online Tools.....	149
5.4.4.9 Online Tools as Open Platform .....	152
5.4.4.9.1 Accessibility and Flexibility.....	152
5.4.4.9.2 Graduates Communication Open Platform.....	153
5.4.4.9.3 Usefulness and Ease of Use.....	153
5.4.4.10 Future Directions in Use of Online Tools in Teaching...	154
5.4.5 Attitude Towards the Label '2.0' .....	156
5.4.5.1 Ambiguity of the Term '2.0' .....	156
5.4.5.2 Various Understanding of the Term and the Label '3.0' ...	159
5.5 Motivations/Incentives for Adopting of Online Tools in Teaching.....	163
5.5.1 Struggle for Survival in Digital Academic Environments.....	163
5.5.2 Job Market Needs and Remaining Competitive.....	166
5.5.3 Communication Technologies and Cultural Changes.....	166
5.6 Barriers and Challenges in Utilising Online Tools.....	167
5.6.1 Workload and Insufficient Time to Learn.....	168
5.6.2 Non-Conducive Environment.....	169
5.6.2.1 High Internet Prices.....	169
5.6.2.2 Network Speed and Disparities in Access.....	170
5.6.2.3 Lack of Services and Facilities.....	171
5.6.3 Lack of Encouragement and Incentives.....	172
5.6.4 Lack of Student Awareness and Willingness.....	173
5.6.5 Security and Privacy Concerns.....	174
<b>Chapter 6 Questionnaire Findings</b>	
6.1 Introduction.....	175
6.2 Descriptive Analysis.....	175
6.2.1 User Profile.....	176
6.2.2 Internet Use.....	178
6.2.3 Learning Management Systems Use .....	182

6.2.4. Web 2.0 and Online Tools.....	183
6.2.4.1 The ‘Web 2.0’ Phenomenon.....	183
6.2.4.2 Online Tools for Personal Versus Learning Purposes.....	188
6.2.5 Online Tools for Learning.....	192
6.2.5.1 Students Preference of Studying and Learning Style.....	192
6.2.5.2 Students’ Attitude Toward Using Online Tools within LIS Courses.....	193
6.2.5.3 Students’ Beliefs Regarding Using Various Online Tools in the Future Workplace.....	195
6.2.5.4 Online Tools and Traditional Methods.....	196
6.2.6 Incentives/Factors and Barriers/Difficulties to Online Tools Use....	198
6.2.6.1 Incentives/Factors to Use and Adopt Online Tools.....	198
6.2.6.2 Barriers/Difficulties in Shaping Online Tools.....	200
6.3 Inferential Analysis.....	202
6.3.1 Gender and Online Tools.....	202
6.3.2. Web 2.0 Label and Descriptive Terms.....	219
6.3.2.1 Web 2.0 Label.....	219
6.3.2.2 Descriptive Terms of Web 2.0.....	224
6.3.3 Smartphone and Online Learning Activities.....	228
6.3.4 Correlation between Personal and Learning Activities on the Web.....	229
6.3.5 Correlation between Students’ Attitude and Beliefs of Using Online Tools.....	232
<b>Chapter 7 The Case Studies</b>	
7.1 Introduction.....	235
7.2 Demographic Information.....	235
7.3 Case Study One: Interviewing Academic and a Group of Students.....	236
7.3.1 Case Study One (Brief Description).....	236
7.3.2 Interview Findings.....	238
7.3.2.1 Learning and Innovations within a Blog.....	239
7.3.2.1.1 Blog and Learning Process.....	239
7.3.2.1.2 Online Communication and Collaborative Learning.....	240
7.3.2.1.3 Understanding Course Content: “Owning” and “Managing”.....	245
7.3.2.1.4 Blog Characteristics as an Open Platform.....	247

7.3.2.2 Willingness to Use Blogs in the Future.....	258
7.3.2.3 Difficulties Involved With Learning With Blogs.....	253
7.3.2.3.1 Internet is Slow.....	253
7.3.2.3.2 Computer Lab Annual Maintenance and Insufficient Computers.....	255
7.3.2.3.3 Lack of Awareness and Web 2.0 Literacy.....	255
7.3.2.3.4 Teaching and Learning Style.....	256
7.3.3 Summary of the Main Findings.....	257
7.4 Case Study Two: Interviews and Online Class Observations.....	258
7.4.1 Case Study Two (Brief Description).....	258
7.4.2 Case Study Two Findings.....	260
7.4.2.1 Towards the Term Web 2.0 and LinkedIn.....	260
7.4.2.2 Useful and Easy Tool for Learning and Teaching.....	261
7.4.2.3 Teaching Style and Communication Manner.....	261
7.4.2.4 LinkedIn as an Online Teaching Environment.....	262
7.4.2.4.1 Resources and Information Sharing.....	262
7.4.2.4.2 LinkedIn as a Platform for Course Content Discussion.....	263
7.4.2.5 Difficulties/Challenges in Learning with LinkedIn.....	267
7.4.2.6 Willingness to Use LinkedIn in the Future.....	268
7.4.3 Summary of the Main Findings.....	268
<b>Chapter 8 Qualitative and Quantitative Data: Triangulation and Discussion</b>	
8.1 Introduction.....	270
8.2 ‘Web 2.0’ Does Not Function As A Consistent Term .....	271
8.3 Academic Community’s Attitude towards Online Tools in Education.....	276
8.3.1 Academic Community’s Knowledge of Online Tools.....	276
8.3.2 Teaching Practice and Collaborative Learning within Online Tools.....	282
8.3.3 Online Tools within the LIS Curriculum.....	287
8.3.4 Online Tools for Scholarly Communication and Research, and the Networked Self.....	290
8.4 Online Tools as Open Platforms Versus Traditional LMSs.....	292
8.5 Online Activities and Gender Differences.....	297
8.6 Challenges and Barriers for Utilising Online Tools.....	303
8.7 Summary.....	308

<b>Chapter 9 Conclusion and Recommendations</b>	
9.1 Introduction.....	309
9.2 Concluding Statements on the Research Objectives.....	309
9.3 Recommendations.....	317
9.3.1 Recommendations for the Oman Government.....	317
9.3.2 Recommendations for Sultan Qaboos University.....	319
9.3.3 Recommendations for the Department of Information Studies.....	319
9.4 Future Research Directions.....	320
9.5 The Thesis in Brief: Final Comments.....	322
<b>Bibliography/Reference List.....</b>	<b>323</b>
<b>Appendix A. Questionnaire (English Version).....</b>	<b>358</b>
<b>Appendix B. Questionnaire (Arabic Version).....</b>	<b>366</b>
<b>Appendix C. Interview Major Questions.....</b>	<b>374</b>
<b>Appendix D. Demographic and Background Information Checklist-Interview.....</b>	<b>375</b>
<b>Appendix E. Online Tools Checklist-Interview.....</b>	<b>376</b>
<b>Appendix F. Consent Forms and Information Sheets Attached to the Interview and the Case Studies</b>	
F 1. Information Sheet to Participate in Research-Face to face Interview.....	378
F 2. Participant's Consent Form-Face to face Interview.....	380
F 3. Information Sheet to Participate in a Case Study One-Lecturer.....	381
F 4. Consent Form to Participate in a Case Study One-Lecturer.....	383
F 5. Information Sheet to Participate in a Case Study One- Students Focus Group.....	384
F 6. Consent Form to Participate in a Case Study One-Students Focus Group.....	386
F 7. Information Sheet to Participate in a Case Study Two-Lecturer.....	387
F 8. Consent Form to Participate in a Case Study Two-Lecturer.....	389
F 9. Information Sheet to Participate in a Case Study Two-student.....	390
F 10. Consent Form to Participate in a Case Study Two-student.....	392
<b>Appendix G. Supplement: Descriptive Analysis of Group Comparison.....</b>	<b>393</b>
<b>Appendix H. Supplement: Bivariate Correlation, Spearman Tests.....</b>	<b>402</b>



## List of Tables

Table 2.1 GCC Internet Users, Population Statistics, 2011 .....	19
Table 2.2 Landscape for Fixed-Telephony, Fixed Internet Services, Mobile-Cellular and Mobile-Broadband Services in the GCC, ITU (2012).....	20
Table 2.3 Internet Users, Population Statistics, Oman.....	26
Table 2.4 Number of LIS Departments in the GCC.....	34
Table 2.5 Number of Students in Bachelor’s Degree Programs in LIS.....	36
Table 2.6 Number of Students in the Higher Diploma in Medical Librarianship Program....	37
Table 2.7 Number of Students at Master’s Degree in LIS, 2004-2011.....	37
Table 2.8 Brief Summary of the Most Popular Visited Sites in the Arab Countries.....	42
Table 2.9 Top Twenty Most Visited Online Web Portals by Internet Users in Oman.....	43
Table 3.1 Main Educational Activities by Using Various Online Tools.....	68
Table 3.2 A Short Literature Review of e-learning in Oman.....	91
Table 4.1 Reliability Statistics Table of Cronbach's Alpha.....	115
Table 4.2 Number of IS Students for Academic Year 2011/2012.....	116
Table 4.3 Total Number of IS Students Who Enrolled in All Programs 2012.....	116
Table 4.4 Questionnaire Format.....	117
Table 4.5 Brief Description of Two Cases .....	121
Table 4.6 Description the Direction of Two Cases.....	122
Table 4.7 Interview Schedule of Case Study One.....	123
Table 5.1 Demographic Information of the Participants.....	125
Table 5.2 Academics’ Knowledge of Various Online Tools.....	136
Table 5.3 Three Groups of Interviewees Concerned With Web 2.0 Term.....	159
Table 5.4 Concepts Used to Describe ‘Web 2.0 label’ .....	162
Table 5.5 Concepts Used to Describe ‘Web 2.0 label’ Divided by Groups.....	163
Table 6.1 Gender.....	176
Table 6.2 Academic Degree.....	177
Table 6.3 Internet Skills of Respondents- self-assessed.....	179
Table 6.4 Frequency of Using Four Categories of Devices in Accessing the Internet.....	180
Table 6.5 Main Methods of Accessing the Internet.....	181
Table 6.6 Location of Internet Access.....	181
Table 6.7 Respondents’ Skill Levels Regarding LMSs-ranked.....	182
Table 6.8 Overall Skills in Using LMSs.....	183
Table 6.9 Descriptive Words of Web 2.0.....	184

Table 6.10 Level of Knowledge/Practice of Ten Online Activities (ranked).....	186
Table 6.11 Knowledge of Online Tools (Frequency and Percentage).....	187
Table 6.12 Online Personal Activities of Respondents (ranked).....	189
Table 6.13 Online Learning Activities of Respondents (ranked).....	190
Table 6.14 Comparison of Means for Learning and Personal Activities.....	192
Table 6.15 Respondents' Preference of Studying (Frequency and Percentage).....	193
Table 6.16 Respondents' Preferred Learning Style (Frequency and Percentage).....	193
Table 6.17 Attitudes Toward Learning LIS Courses Using Various Online Tools (ranked).....	194
Table 6.18 Students' Belief in the Value of Using Various Online Tools in the Future Workplace (ranked).....	196
Table 6.19 Attitudes toward Using Various Online Tools in Learning Compare to Other Methods (ranked).....	197
Table 6.20 Perceived Importance Toward Online Tools (ranked).....	199
Table 6.21 Perceived Importance Toward Barriers/Challenges in Adopting Online Tools (ranked).....	201
Table 6.22 A. Chi-Square Tests 'Gender' versus 'Safety and Privacy Concerns'.....	203
Table 6.22 B. Cross-Tabulation 'Gender' versus 'Safety and Privacy Concerns'.....	204
Table 6.25 A. Chi-Square Tests 'Gender' versus 'Blogging'.....	205
Table 6.25 B. Cross-Tabulation 'Gender' versus 'Blogging'.....	206
Table 6.27 B. Cross-Tabulation 'Gender' versus 'Using Discussion Forums (not in an LMS)'.....	207
Table 6.28 B. Cross-Tabulation 'Gender' versus 'Facebook'.....	208
Table 6.29 B. Cross-Tabulation 'Gender' versus 'YouTube'.....	209
Table 6.33 B. Cross-Tabulation 'Gender' versus 'Use the internet for Social Networking'.....	211
Table 6.35 B. Cross-Tabulation 'Gender' versus 'Use the internet in the Collaboration of Ideas (e.g., Wikis and Blogs)'.....	212
Table 6.36 B. Cross-Tabulation 'Gender' versus 'Using Facebook to Communicate with and Collaborate on Ideas with Others'.....	213
Table 6.38 B. Cross-Tabulation 'Gender' versus 'Use the Web for Instant Messaging/Chat'.....	214
Table 6.39 B. Cross-Tabulation 'Gender' versus 'Use the internet for Social Networking'.....	215
Table 6.40 B. Cross-Tabulation 'Gender' versus 'Use the internet for Contributing and Developing Content'.....	216

Table 6.41 B. Cross-Tabulation ‘Gender’ versus ‘Use the internet for the Collaboration of Ideas’ .....	217
Table 6.42 B. Cross-Tabulation ‘Gender’ versus ‘Using Facebook to Communicate and Collaborate on Ideas with Others’ .....	218
Table 6.43 A. Chi-Square Tests ‘Web 2.0 awareness’ versus ‘Document Sharing’ .....	220
Table 6.43 B. Cross-Tabulation ‘Web 2.0 awareness’ versus ‘Document Sharing’ .....	220
Table 6.44 A. Chi-Square Tests ‘Web 2.0 awareness’ versus ‘Social Bookmarking’ .....	221
Table 6.44 B. Cross-Tabulation ‘Web 2.0 awareness’ versus ‘Social Bookmarking’ .....	221
Table 6.45 A. Chi-Square Tests ‘Web 2.0 awareness’ versus ‘Listening to Podcasts’ .....	222
Table 6.45 B. Cross-Tabulation ‘Web 2.0 awareness’ versus ‘Listening to Podcasts’ .....	223
Table 6.46 Spearman's rho Correlations ‘Descriptive Words of Web 2.0’ versus ‘Five Online Activities’ (significant results only).....	225
Table 6.47 Spearman's rho Correlations ‘Descriptive Words of Web 2.0’ versus ‘Five Online Tools (significant results only).....	226
Table 6.48 Spearman's rho Correlations ‘Smart phone’ versus ‘Seven Online Tools’ .....	228
Table 6.49 Spearman's rho Correlations ‘Smart Phone’ versus ‘Online Learning Activities’ .....	229
Table 6.50 A. Bivariate Correlation ‘Use the web to browse or search for information’, Personal versus Learning Activities.....	230
Table 6.51 A. Bivariate correlation ‘Using various internet applications improves my collaboration with others’ versus ‘Using various internet applications would improve my collaboration with others’ .....	233
Table 7.1 Demographic Information of Participants in Case Study One.....	236
Table 7.2 Examples of Students’ Blogs.....	243
Table 7.3 Respondents’ Willingness to Use Blogs in the Future.....	251

## List of Figures

Figure 1.1 Organization of the Study.....	10
Figure 2.1 Map of Gulf Cooperation Council .....	15
Figure 2.2 The Emergence of the Internet in the GCC.....	18
Figure 2.3 Map of Oman.....	23
Figure 2.4 Google Trends of Web Search Interest: Social Media. Oman, 2004 – Present.....	41
Figure 3.1 Google Trends of Web Search Interest: Web 2.0 and Social Media, Worldwide, 2004–Present.....	46
Figure 3.2 Google Trends of Web Search Interest: Web 3.0. Worldwide, 2004 – Present.....	52
Figure 4.1 Research Design and Procedures.....	98
Figure 4.2 The Interplay Between Three Stages: Interviews, Surveys And Case Studies...	100
Figure 6.1 Academic Year.....	177
Figure 6.2 Respondents Distributed by Province.....	178
Figure 6.3 Year of First Internet Use.....	179
Figure 6.4 Time Spent on the Internet.....	180
Figure 7.1 Applying Different Characteristics of Blogs in Designing.....	244
Figure 7.2 Course Descriptions on LinkedIn.....	259
Figure 7.3 Example of Resources and Link Sharing Provided by the Academic on a LinkedIn Page.....	263
Figure 7.4 Example of Resources and Link Sharing Provided by the Student on LinkedIn Page.....	263
Figure 7.5 Example of Topics Posted for Discussion on LinkedIn Page.....	264
Figure 7.6 Example of An Assignment on LinkedIn Page.....	265
Figure 7.7 Example 1 of the Assignment (Writing Essay) Posted by Academic on LinkedIn Page.....	265
Figure 7.8 Example 1 of Assignment (Writing Essay) by Student on LinkedIn Page.....	266
Figure 7.9 Example 2 of Assignment (Writing Essay) Posted by Academic on LinkedIn Page.....	266
Figure 7.10 Example 2 of Assignment (Writing Essay) by Student on LinkedIn Page.....	167
Figure 8.1 Interview and Survey Results on the Ambiguity of the Term Web 2.0.....	272
Figure 8.2 Finding Triangulation “Online Tools versus Traditional LMS”.....	293
Figure 8.3 Finding Triangulation “Barriers /Challenges of Adopting Online Tools”.....	305

# Chapter 1 Introduction

## 1.1 Introduction

In recent years, online communication technologies and web services have become a central part of people's work and have transformed their lives. The internet and web enables the development of new online tools such as Facebook, LinkedIn and Twitter, collectively known as 'Web 2.0' tools. These are potentially revolutionary, changing the way people use and interact with the internet and each other. They have emerged as powerful tools for organisations for the purposes of collaboration and communication, both internally and externally. 'Web 2.0' impacted many disciplines and fields, however the term has also become more ambiguous, and can mean quite different things in different contexts. Other labels such as 'Web 3.0' or 'semantic web', 'social media' and 'social software' also, at times, increase this ambiguity.

Various online tools such as Facebook and Twitter are making it easier for people to communicate with friends and colleagues, build new relationships with others, and conduct business, share information and exchange knowledge between organisations. Organisations and companies realise much higher levels of business benefits from these online tools and applications. Many studies address the use of these tools in business, particularly in marketing and communication with customers, suppliers and vendors (e.g., Parise & Guinan, 2008; Bughin, Chui, Miller, 2009; Harrison & Barthel, 2009; Zimmer, 2009; Andriole, 2010; Tatarchevskiy, 2011). Businesses gain advantages from online tools and applications, particularly in harnessing various types of social media for marketing activities (see Mangold & Faulds, 2009; Kaplan & Haenlein, 2010).

With readers, scholars and authors moving online, online tools are gaining popularity and are expanding into the education sector, with growing roles in terms of facilitating collaboration and communication activities. A significant issue regarding emergent online tools and media is whether or not they will have an effective role in teaching and learning, for example, in contributions to student learning, communication and collaboration. In the academic environment, academics are

striving to take advantage of online tools. Many studies have reported the use and adoption of these tools in education sectors (e.g., Ullrich et al., 2008; Peterson, 2009; Li & Pitts, 2009; Malhiwsky, 2010; Union, 2011). In higher education, online tools are established in many universities, and are have clear educational applications as reported in numerous studies (e.g., Grosseck, 2009; Shih & Waugh, 2011). For example, blogging is used in class for discussions, to quickly give feedback to students, to update new information, to post assignments and homework and to post comments and questions related to a specific subject. Micro blogging is used for classroom community, reader response, collaborative writing, project management, assessing opinions, reference or research, personal learning networks and locating original sources of ideas. Wikis are used for student projects, as presentation tools and for classroom discussion. Really Simple Syndication (RSS) is used for professional development, to update information and to save time for other tasks; social bookmarking, for tracking resources, and authors, in addition to book updates and resource sharing; social networking sites (SNSs), facilitate communication, with a variety of users, and increase information sharing and message exchanges.

Online tools have not just been drivers of change in higher education, but aid academics, increasing skills, knowledge, and the way they communicate and collaborate. Some academics have established their own blogs and sites, and created accounts on SNSs such as Facebook or in professional networks such as LinkedIn. These tools and applications are used to design presences, which are used for information and knowledge sharing. Others use these tools and applications for professional purposes and research, such as following research and activities including publishing resumes and research publications. For example, some academics use online tools such as Academia.edu and LinkedIn for collaboration by following latest research in their field, updating and communicating with other professionals in the same field. Online tools have been used for various purposes, as communication channels (Downes, 2004), social networks (boyd & Ellison, 2007; Ellison, Steinfield & Lampe (2006); Lampe, Ellison & Steinfield, 2006) and discussion boards (Bhappu, Ebner, Kaufman & Welsh, 2009).

While the appearance of the internet brought many changes and challenges, for academics, online collaboration, teaching, learning and research tools have led to

new challenges related to teaching and learning. These challenges have been discussed by many scholars and authors in various disciplines, as will be detailed in Chapter 3.

The research reported here is an attempt to explore the role of online tools, characterised as 'Web 2.0', in teaching and learning, focusing on the usage of these tools and applications in a range of contexts, including professional and personal, specifically in relation to teaching and learning, through the ambiguous but still important focal point of 'Web 2.0'. It also explores the attitude of academics as well as students toward online tools; and gender differences in online activities. This research uses the Department of Information Studies (DIS) at Sultan Qaboos University (SQU) in Oman as the subject pool. The research also aims to explore incentives for and barriers to adoption and innovation of online tools by academics in Oman.

## **1.2 Statement of the Problem**

During the past years but before the emergence of the 'Web 2.0' label, a number of studies on the use of the internet were conducted, mainly in developed countries. In addition, a numbers of studies have discussed distance education, e-learning and Information and Communications Technology (ICT) across many sectors. Since 2004 when the term 'Web 2.0' was coined, the internet has become an essential study aid outside the classroom. Therefore, online tools including 'Web 2.0' applications increasingly have a place inside the classroom, which leads many educators and instructors to consider using these applications in education.

There are many studies discussing the potential of various online tools for transforming education (e.g., Downes, 2004; Thompson, 2007; Brown & Adler, 2008; Collis & Moonen, 2008; Richardson, 2009). Despite the growing number of papers and projects on the use of online tools, the full abilities and actual uses of these tools and applications for teaching and learning in addition to professional uses are yet to be established, and many questions are still unanswered. For example, the way in which academics interact with online tools for teaching practices and research remains unclear. Additionally, several issues have arisen regarding which online

tools are known and used by academics. A number of authors and scholars have pointed out several critical issues regarding the use of these tools. For example, Rollett, Lux, Strohmaier and Dosinger (2007) claimed that “While there is a lot of hype around various concepts associated with the term Web 2.0 in industry, little academic research has so far been conducted on the implications of this new approach for the domain of education” (p. 1). Ajjan and Hartshorne (2008) also stated that “While students are increasing their use of emerging technologies such as text messaging, wikis, social networks, and other Web 2.0 applications, this is not the case with many university faculty” (p. 71). This indicates that the faculty were less open to the idea of using these tools for different purposes, while many online tools such as Wikipedia and YouTube have been used for public and social interactions (Cummings, Massey & Ramesh, 2009). An and Williams (2010) also pointed out that while ‘Web 2.0’ applications are becoming ubiquitous in the education sectors, many academics still have little or no experience with them. The use of Web 2.0 is still in its infancy in higher education (Chandra & Chalmers, 2010). Therefore, as previous studies suggest, the use of online tools in the education sector needs more attention.

Moreover, the issue does not just include the use and shape of these tools and applications but is also related to the ambiguity and uncertainty of the concepts describing ‘Web 2.0’. For example, “the notions of Social Software and Web 2.0 have thus far been vague; there is no common understanding in existence” (Fuchs et al., 2010, p. 41). Another issue is the role of faculty within these new applications and technologies, particularly the role of Library and Information Science (LIS) faculty in a digital world with the development of the web. With the influence of these applications on different fields including LIS and information professionals, new roles have been considered for librarians and information professionals to work in a digital world (Sarrafzadeh, Hazeri & Alavi, 2010; Partridge, Lee & Munro, 2010; Al-Daihani, 2010).

All of these studies point to an unclear map regarding the adoption of these technologies and tools by academics, who need to take advantage of various online tools and utilise them in different ways in order to benefit from them in teaching and learning. Most studies have focused on students’ thoughts about the term ‘Web 2.0’ and the use of these applications in education. Not much, however, is known about



the ways university faculty, who are expected to prepare students to work in different sectors, utilise and adopt these online tools; the same applies to the students who are expected to use these online tools to enhance their skills for work in the future. One might ask the following questions: To what extent are these online tools actually used by academics for innovation within the curriculum? In which contexts are they used – professional, personal, or learning and teaching?

A number of past studies have shown that university students use a fairly limited range of technologies; they did not frequently use the newer online tools or applications such as wikis, blogs and collaborative social applications for academic purposes (Kennedy et al., 2007; Margaryan, Littlejohn & Vojt, 2009; Kvavik as cited in Uys, Dalgarno, Carlson, Crampton & Tinkler, 2011). This is supported by Marharyan et al. (2009), who conducted a study among undergraduate students in two British Universities and found that the students use a limited range of these applications for learning. Additionally, other significant early studies of 'Web 2.0' have claimed that students have limited familiarity with 'Web 2.0 term' and these applications (e.g., Chan & McLoughlin, 2008; Kennedy et al., 2007). It should be noted that these results may not reflect the current familiarity and use of 'Web 2.0' applications due to the date of these studies. However, one main direction that can be noticed from previous experiences and studies with regard to use and utilisation of online tools is the development of effective ways to serve teaching and improve learning. A combination of student and academic opinions and experience can illuminate the ways in which online tools are used and perceived by them.

As such, in the Arabic world and Gulf Cooperation Council (GCC), most of the research has been carried out by scholars in the area of e-learning, computers, ICT, and the internet, and has focused more on incentives for, than on barriers against, their use (e.g., Abdelrahman, 2001; Abouchedid & Eid, 2004; Abdelraheem, 2006; Al-Doub, Goodwin & Al-Hunaiyyan, 2008; Ali & Magalhaes, 2008; Aldraiby, 2010). Chaurasia (2011), for example, noted that "Much of our understanding of users' perception towards learning technologies comes from prior research concerning attitude towards the effectiveness of e-learning and distance learning systems" (p. 175). Most of the studies in the GCC have been conducted in the area of e-learning; however, a clear understanding of the benefits and challenges associated

with e-learning has still not been achieved (Stuart, 2004 as cited in Chaurasia, 2011). For example, Al-hawari, Meloche and Al-halabi (2009) focused on a preliminary investigation of the factors that influence e-learning in the Middle East as well as in Arab countries. He found that the internet, legislation, human factors and web content were the main factors influencing e-learning. There are many significant barriers to technology cited in the UAE regarding e-learning (see Vrazalic, MacGregor, Behl & Fitzgerald, 2010; Schoepp, 2005). As such, there are several e-learning barriers that employees face in organisations that might be similar to barriers in GCC (see Mungania, 2003). Al-Wehaibi, Al-Wabil, Alshawi and Alshankity (2008) studied how academics adopt and use internet technologies in communication, research, and teaching in Saudi Arabian Universities. They found that the main barriers to using internet technologies were intellectual property issues and concerns regarding loss of privacy and internet connectivity. There are other significant barriers affecting the use of the internet in the Arab world (see Alrawabdeh, 2009; Petsel, 2009; Al-Wehaibi et al. 2008). As a previous review has shown, most of the research conducted in the GCC has addressed the internet and related areas, scholars focused more on e-learning issues; very few talked about utilising online tools in education.

The use of online tools in the education sector is inadequately understood in the Arabic world (Chaurasia, Asma & Ahmed, 2011). Al-Khalifa (2010), for example, noted that, little research has been done on the topic of the usage and effectiveness of online tools including 'Web 2.0' applications in teaching and learning contexts in the Arab world or in the GCC. A few studies have discussed the use of online tools in general (e.g., Chaurasia, 2011; Alzahrani & Woollard, 2012; Ahmad, Hussain & Aqil, 2013). So far, however, the effective use and the adoption of various online tools by academics in the teaching and learning context in the GCC are far from clear. In other words, the tremendous increase in the use of these applications in the GCC, particularly in Oman has been observed; however, few studies have been conducted in this area and most of them have been conducted and reported in the Arabic language. None of these studies has undertaken a sufficiently thorough investigation of the adoption and use of online tools in Oman, whether for teaching practice or for personal purposes. Whether using other forms of Learning Management Systems (LMSs) accelerates acquisition and use of these tools and

understanding of the term ‘Web 2.0’. In other words, very few studies have examined online, and any such studies have had a very broad focus, rather than paying specific attention to the actual use of the Web by academics in the GCC. This may reflect the various issues related to academics: the perceived use of these applications by LIS academics in Oman in a range of contexts – including professional and personal, and specifically for teaching and learning – has not been investigated.

As such, the use and adoption of these applications by academics in supporting the curriculum are still far from clear and needs to be fully addressed. More specifically, within LIS or Information Studies (IS) programs, the effectiveness and usage of online tools and applications is not yet clearly understood. When combined, these factors indicate that there is a gap in the literature in the GCC with regard to the adoption of online tools in teaching practice. In order to address this issue, this research study explores the use and adoption of online tools by LIS academics in teaching practice in GCC, in addition to a combination of students and academics’ views. Using LIS as the basis of the case study, it will focus on addressing the research objectives, which cover all issues related to academic teaching practices and the curriculum.

### **1.3 Objectives and Research Question**

The central research question is:

*How are academic staff within the Department of Information Studies at Sultan Qaboos University in Oman adopting and utilising online tools in their teaching practice? What is Information Studies students’ attitude toward using these tools within the LIS curriculum?*

The main objectives of this research are as follows:

1. Explore the ambiguity of the ‘Web 2.0’ label in the academic community.
2. Understand the context for online tool use by academics at DIS in Oman with reference to other uses of technologies for teaching and learning, and the

relationship of these applications to curriculum being taught and the social context of Oman.

3. Identify the way in which online tools are adopted and perceived by academics at DIS in Oman in a range of contexts, including professional and personal, specifically for teaching and learning.
4. Explore gender differences in attitudes of university students towards online tools.
5. Determine the reasons why LIS academics as well as students use or do not use online tools in their teaching and learning, focusing on incentives for, and barriers to, adoption and innovation.

In meeting these educationally grounded objectives, the study also explores not only the impact of the internet in society and the way people use and adopt online tools, but also focuses on barriers and motivations, influences the adoption and utilising of the internet.

#### **1.4 Significance of the Study**

This research is significant for the following reasons.

1. It will create new knowledge about the level of use and effectiveness of online tools and ambiguity of the term 'Web 2.0' in teaching and learning in Oman.
2. It will further add to our understanding of these tools and applications in all forms of education by examining it in a specific context, thus exploring the contextual specificity of these applications, and then the global nature of online tools in the GCC.
3. The results of this research will enable Gulf universities to identify the barriers that influence academic learning communities in regard to the adoption of such applications in their learning and teaching. This may inform Gulf governments regarding internet access issues and privacy (prevention of access to such tools in some countries). In addition, this may help to identify the most significant barriers related to academic development and then support GCC universities in addressing these issues.
4. The results of this research will support social learning and collaborations in Oman by demonstrating the importance of changing learning and teaching styles using various online tools.

5. Results of this research will enable systemic improvements in the educational approach in the GCC in both the target discipline (LIS) and others, while as a result of ICT development and the Arab Spring, most GCC governments seek to reform and develop education by looking at internet policies and advantages.
6. The result of this research might be applicable to other teaching areas because of the multidisciplinary nature of the LIS field.

Exploring the use of these tools and applications in teaching and learning will help to explore different issues, whether related to student learning or to academic achievement and development. In doing so, the study will identify issues that may need in-depth investigation in Oman. This will help researchers in the field of education to investigate these issues, and it will open new doors of critical research in regard to education. Another significant outcome that might be related to fundamentals of Information Technology (IT) in Oman from both educator and learner perspectives is that this research will produce recommendations. The GCC, particularly Oman, is changing regarding the education system and policies as a result of Arab revolutions; this will draw a clearer picture of using such applications in teaching and the attitude of academics and students towards using internet applications in teaching and learning.

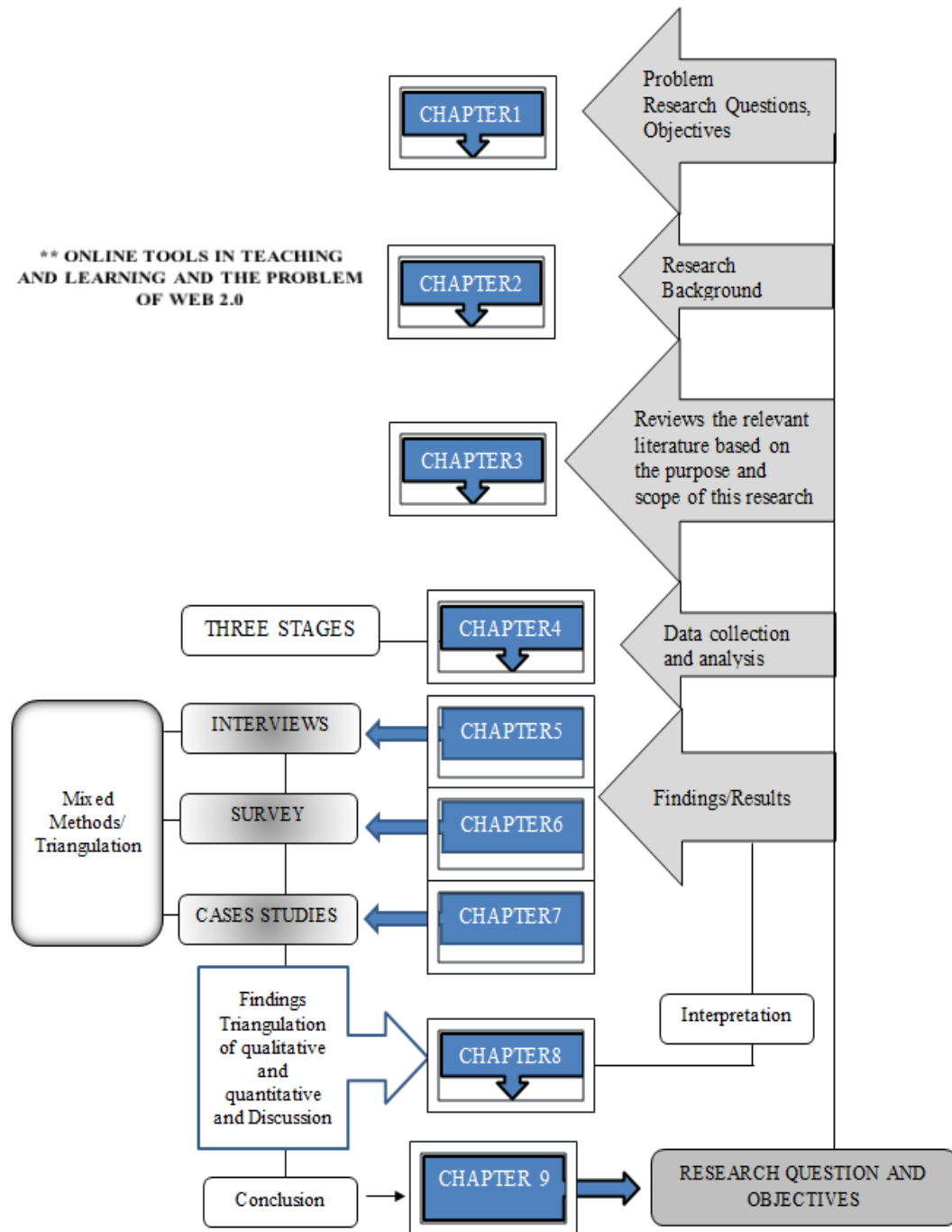
More importantly, this research first considers the important area of attitudes toward using the internet during a time of change in these countries. The study may therefore produce intriguing results due to changing attitudes of the academic community in the GCC and increasing rights to freedom of opinion and expression. Secondly, the study will be conducted over five years to compare changes due to internet development and the 'Arab Spring'.

### **1.5 Organization of the Study**

The study is organised into nine main chapters as indicated in Figure 1.1. This figure provides a map of the flow of this thesis within these nine chapters. The first chapter gives an overview of the study, through an introduction that summarises the main body of this thesis, indicating the scope and direction of the thesis and providing a context for the main issue. The chapter also describes different aspects of the

problem that have produced the research objectives and questions of the study, as well as the importance of conducting this research in the GCC, particularly in Oman.

Figure 1.1 Organisation of the Study



Chapter 2 provides a clear map of the study’s background. This contains all the information on the social context in the GCC and particularly in Oman. The chapter begins by introducing the GCC with common characteristics of these states,

including education. The chapter also provides a general picture of the internet in the GCC, and women and ICT. Then the chapter focuses on giving a brief description of Oman, the internet and IT, SQU and DIS, from which the sample is drawn. The last section of this chapter presents statistics of some online tools across social worlds, and the growth and development of online tools or 'Web 2.0' in the Arabic world, particularly the GCC.

Chapter 3 reviews the relevant literature based on the purpose and scope of this research. These reviews include examining the ambiguity of the concepts describing 'Web 2.0' by describing the label 'Web 2.0' and discussing web categorisation, the label 'Web 3.0' or semantic web and various generations of the web, various online tools and LMSs. Because it is important to identify the way in which these tools are shaped and perceived by academics as well as students in a range of contexts, including professional and personal and specifically for teaching and learning, the study reviews the utilising of online tools in these three zones. The chapter also highlights the challenges/barriers and factors/incentives influencing the use of online tools. The adoption and use of various online tools within LIS education are also discussed. The chapter introduces the Social Shaping of Technology (SST), focusing on the main idea of this approach in relation to this research. The chapter also presents a variety of research in regard to gender and online tools and applications in order to explore whether there any differences between genders in adopting and using online tools. The chapter concludes by highlighting the utilising of these tools in education in the GCC, particularly in Oman in regard to opportunities and challenges for new generations. It should be noted, that as this is a rapidly changing field, some studies referenced which are just a few years old may already be dated. However, these are still addressed to ensure a solid historical overview is provided.

Chapter 4 describes the methods used in this research. The methodology chapter is divided into four sections: the first section describes the research design and instrumentation, chosen sample and population, ethical considerations, data storage and reliability and trustworthiness. Section two includes a detailed description of stage one of the research, which includes interview design, major questions, and face-to-face interviews: advantages and disadvantages, the population, sampling procedures and data collection and analysis. Section three includes a detailed

description of stage two, which includes questionnaire design, major questions, pilot questionnaire and online design, the population, sampling procedures and data collection and analysis. Section four describes the case studies that were the final stage of the research; this includes the case studies' design, procedures and content as well as data collection and analysis.

Chapter 5 presents results from face-to-face interviews. It contains demographic results relevant to the respondents and their knowledge of various online tools. This chapter is divided into four sections as follows:

- Internet and educational technologies;
- Choosing and using online tools within a curriculum;
- Motivations/Incentives for adopting the use of online tools;
- Barriers/Challenges in adopting internet use.

Content analysis is used in this chapter in order to present data around each of the emerging themes from the perspective of the interviewees. Six phases of thematic analysis are considered, as indicated in Chapter 4. Chapter 5 presents all the results regarding academics' attitude toward using online tools in teaching practices. It also summarises the major findings of the interviews regarding the use and adoption of online tools in three zones as mentioned previously.

Chapter 6 contains the analysis of the quantitative data obtained from the survey. It presents frequencies and percentages of the variables' distribution, using figures and tables. The main focus of these analyses is the attitude of the respondents toward online tools in learning and in personal purposes and the level of knowledge regarding online tools presented in this study. The chapter also undertakes inferential analysis on particular group comparisons using a crosstabs table and bivariate correlation using the Spearman test.

Chapter 7 contains the analysis of two cases, including the analysis of the qualitative data obtained from interviews, reviewed documents and online class observations. This chapter is divided in two main sections. The first section presents the analysis of the qualitative data obtained from interviews with the respondents: one academic and



ten students (Case One). The next section reviews the analysis of the qualitative data obtained from the interviews and online class observations (Case Two); the interviews include one academic and his student who were doing an online course.

Chapter 8 is a critical chapter that presents the interplay of the results of the quantitative and qualitative triangulating the results from three stages: interviews, surveys and case studies. This chapter includes the discussion around the following topics: the ‘Web 2.0’ label – ambiguity and imprecision, which explores the issue of lack of an agreed-upon definition for the ‘Web 2.0’ and its descriptive words; online tools as an open platform for graduates and LMS; online tools in education, including several areas to discuss including the academic community's knowledge of online tools, teaching practice and collaborative learning within online tools, utilising online tools within LIS curricula and for scholarly communication and collaborative research. Gender and online tools as well as challenges and barriers for adopting online tools are also discussed. Major findings are highlighted and discussed in this chapter, with consideration given to their comparison with other relevant research literature.

Chapter 9 presents the summary of the main findings, and it is the concluding chapter. Major findings are highlighted in this chapter; it summarises the research outcomes according to the research objectives. The chapter also contains major recommendations for DIS at SQU, and the wider GCC and contains suggestions for future research directions.

## Chapter 2 Research Background

### 2.1 Introduction

The current study utilises mixed methods to investigate the attitude of academics and students towards various online tools, focusing on the role of these online tools in university education within the GCC and using as a case study the various online tools supporting the teaching and learning practices of the ISD at SQU in Oman. In doing so, it is necessary to provide a brief history of the GCC, particularly Oman and a general picture of the internet use in the region.

This chapter starts by providing a general background of the GCC and internet usage in these countries. It also provides background about the internet, IT and higher education in Oman. General information about SQU is provided. This chapter also gives a clear picture of the DIS from which the study population was drawn, presenting broad information about the department and noting other LIS departments in the GCC. The chapter concludes by presenting brief statistics of various online tools, such as Facebook, Twitter, LinkedIn and YouTube, and the growth and development of the term ‘Web 2.0’ in the Arabic world, particularly in the GCC.

### 2.2 Gulf Cooperation Council – General Background

The term ‘the Arab World’ refers to 22 countries (UNESCO identifies 21 Arab countries), and encompasses the region from the Atlantic Ocean near northern Africa and extending east to the Arabian Sea. Ten of the Arab countries are located in Africa which has the majority of the Arab population, and 12 are in Asia. Some of these countries list Arabic as their only official language, while others include other languages such as English and French, which are commonly spoken by Arabs. French, for example, is commonly spoken by Tunisians and Algerians. Arab countries differ from each other and vary regionally within each country with respect to demographics, levels of income, economics, education, traditional society and urbanisation. The majority of Arabs in the Arab World are Muslim; however, there is a significant number of Arab Christians and some Arab Jews.

The GCC was established in 1981 by six countries: the Kingdom of Saudi Arabia (KSA), the United Arab Emirates (UAE), Kuwait, Bahrain, Qatar and Oman. These countries are located in the Arabian Gulf, in the south-western region of the Asian continent (see Figure 2.1).

Figure 2.1 Map of Gulf Cooperation Council



\*Retrieved from <http://www.worldtribune.com/wp-content/uploads/2013/12/capital-ppt-map-of-gulf-cooperation-council-countries.jpg>

The terms ‘Arab States of the Gulf’ and ‘Arab Gulf Cooperation Council’ and ‘Gulf Cooperation Council’ all refer to these six countries. Over the past decade and before the onset of oil production, the countries of the GCC depended on big merchants who owned the commercial pearl ships and fishing vessels. The discovery of oil and natural gas, and the availability of other resources such as iron and zinc contributed to the development and enhancement of these countries’ economies, with each country going on to develop different sectors, including education. The GCC members are both Arab and Muslim States. Islam is the main religion in these countries, and they claim to derive their political and legal systems from the Islamic religion. Most GCC member states are monarchical or semi-monarchical governments; governments and related bodies in the GCC are usually unelected.

The GCC has aimed to adopt similar systems and laws regulating economic and financial affairs as well as in education. According to Al-Khaldi (2007), the primary objectives of the GCC were to:

- Formulate similar regulations in various fields such as economy, finance, trade, customs, tourism, legislation, and administration
- Foster scientific and technical progress in industry, mining, agriculture, water and animal resources
- Establish scientific research centres
- Set up joint ventures
- Encourage cooperation of the private sector
- Strengthen ties between their peoples (p. 9)

Education in the GCC is free to all GCC citizens, from elementary school to university. Like universities in the Western world, the higher education system in the GCC seeks to instil values, to provide knowledge about the needs of each society and to teach critical thinking. “Religion is held in high esteem and hence the existence of Islamism and the Quranic schools, even before the advent of Western education” (Akinyemi, 2003, p. 2). The structure and practice of higher education in the GCC is different from that of Western education. For example, at some universities, male and female students attend the same classes on the same campus and are subject to the same rules and restrictions, but other universities do not allow students to mix, either on the same campus or in the same courses. As a result, some institutions do not mix genders in the same class. An example of a university that mixes female students with males in the same class is SQU in Oman, in which students (female and male) attend the same courses and classes in all colleges. An example of separation is provided by the College of Education for Girls – Literature Section, College of Education for the preparation of female teachers in Umm al-Qura University in KSA. As Weber (2011) observed, “Higher education in Saudi Arabia is gender segregated, and lecturers sometimes transmit lectures to single sex groups in separate rooms via closed circuit TV, an obvious precursor to online learning” (p. 1).

There is a long history of distance education in the Arab world which can be divided into three categories (Alsunbul, Moore and Kearsley as cited in Al-Harhi, 2005):

1. First-generation distance education: This took place through the Arab University of Beirut (during the 1960s) via correspondence studies.
2. Second-generation distance education: This began during the 1980s by establishing open universities that used a total system approach. One recent such

endeavour in the region is the Arab Open University (AOU) of Prince Talal bin Abdul Aziz Al-Soud, which is affiliated with the United Kingdom Open University. Examples of some countries with programs of this nature are Egypt, Sudan, Saudi Arabia and Syria. They used radio and television broadcasting in this stage.

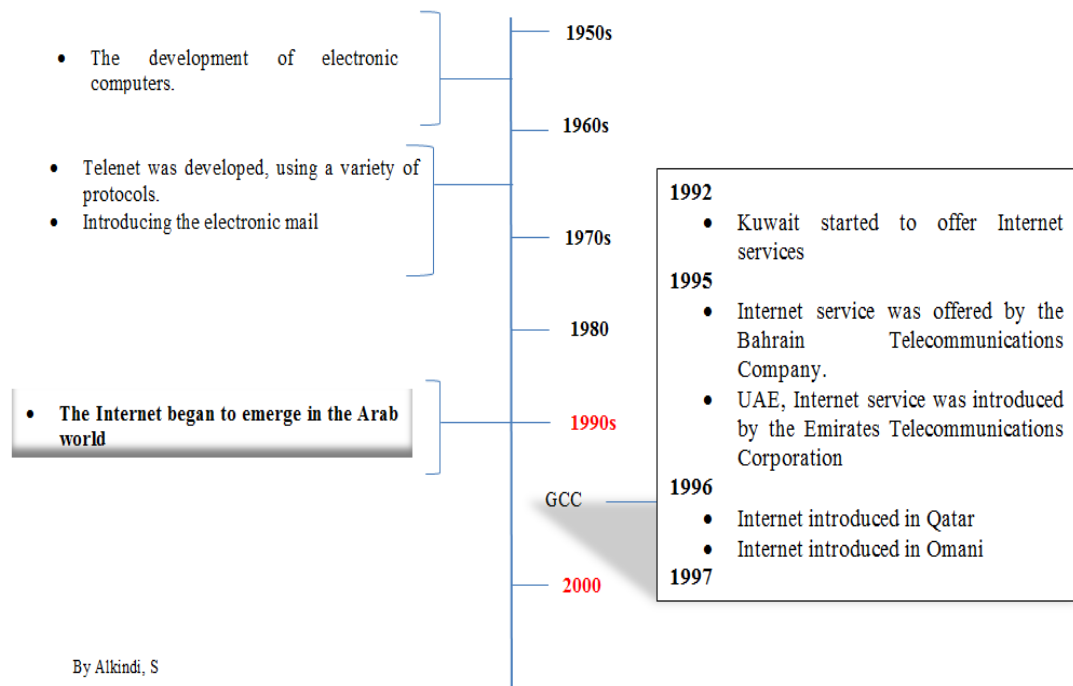
3. Third generation distance education: this includes use of electronic media and other technologies to supplement face-to-face courses. Examples of such universities are Arab Gulf public universities such as Ziad University, UAE and SQU, Oman. (Moore and Kearsley as cited in Al-Harhi, 2005).

Today, the rapid development of the education sector is noticeable. The number of universities and colleges including foreign universities, particularly private universities and colleges, has increased in the GCC over the last ten years. The establishment of private companies and business organisations, and the interest of foreign companies in investing in the GCC, are increasing rapidly. As a result, there is a need for employees to fill shortages in factories and companies. These factors have encouraged governments and individuals to invest in education by establishing institutions and colleges for students in GCC, in order to qualify them to work in different sectors. More importantly, many international universities and educational institutions from around the world have established branches and campuses in the GCC – among them the Australian Hawthorn Institution, the British Council, the Germany University in Oman, the American College of Dubai. Distance learning for delivering teaching and e-learning has increased, and all of the Gulf governments have opened the door to outside scholarship in various Western countries.

### **2.3 The General Picture of the Internet in the GCC**

The internet spread slowly in the GCC. At the beginning of the 1990s, the internet began to emerge in the Arab world (Rinnawi, 2002) and became important for information sharing and knowledge dissemination. “In January 1994, the Persian Gulf had no TCP/IP hosts when the rest of the world had over 2.2 million” (Burkhart & Goodman, 1998, p. 19). Figure 2.2 gives a map of the emergence of the internet in the GCC according to various studies.

Figure 2.2 The Emergence of the Internet in the GCC



\* This figure was developed by researcher based on the data collected from literature

In the GCC, Bahrain started to utilise the internet in school classrooms in the early 1990s (Jamlan, 2004). Kuwait started to offer internet services in 1992 and was the first Arab country to provide public internet access in 1994 (Jradi as cited in Al-Ansari, 2006). In December 1995, “Internet service was offered by the Bahrain Telecommunications Company (Batelco) and service opened, and has been a hit with local and Saudi companies” (Burkhart & Goodman, 1998, p. 20). In 1997, Kuwait started to provide academic access to students (Burkhart & Goodman, 1998). The internet grew slowly in KSA from the time it was introduced to Saudi society in 1997. The reason for this may be the “many concerns about the types of immoral material found on the Internet have been behind the hesitation to climb onto the information superhighway” (Mirza, 1998, p. 1). In the UAE, internet service was introduced by the Emirates Telecommunications Corporation (Etisalat) in August 1995, whereas in Qatar and Oman, public internet access became available in June and December 1996, respectively (Burkhart & Goodman, 1998). Thus, the period from 1992 to 1998 is a very important time for GCC, when internet started to become available for residents of GCC member states.

According to statistics found on the Internet World Stats site (2011), the GCC member states have made good progress in regard to internet adoption and usage (Table 2.1). However, these statistics may not reflect how the internet is currently being used in the GCC due to the effects of the ‘Arab revolutions’ in 2011, during which the use of SNSs and other social media increased in the Arabic world. Even so, according to these statistics, internet usage in the GCC has increased considerably.

Table 2.1 GCC Internet Users, Population Statistics, 2011

<b>GCC</b>	<b>Population ( 2011 Est. )</b>	<b>Users, in Dec/2000</b>	<b>Internet Usage 31-Dec-2011</b>	<b>% Population (Penetration)</b>	<b>Users % Region</b>
<b>Bahrain</b>	1,214,705	40,000	694,009	57.1 %	0.9 %
<b>Kuwait</b>	2,595,628	150,000	1,100,000	42.4 %	1.4 %
<b>Oman</b>	3,027,959	90,000	1,741,804	57.5 %	2.3 %
<b>Qatar</b>	848,016	30,000	563,800	66.5 %	0.8 %
<b>KSA</b>	26,131,703	200,000	11,400,000	43.6 %	14.8 %
<b>UAE</b>	5,148,664	735,000	3,555,100	69.0 %	4.9 %

There are significant differences among countries in terms of the liberalisation of services, as well as in the number of service providers operating. Table 2.2 displays data provided by International Telecommunication Union, ITU (2012), showing the regulatory landscape for fixed-telephony, fixed internet services, mobile-cellular and mobile-broadband services in GCC as at December 2011. With respect to wireless network deployments, “Bahrain and UAE launched 3G services as early as 2003, and Kuwait, Qatar and Saudi Arabia followed in 2006. Kuwait, KSA and UAE are currently the only countries to have launched long term evolution (LTE) networks” (ITU, 2012, p. 8). It is also important to mention that the ICT sector has progressed in Arab regions in the past decade. According to the United Nations Economic and Social Commission for Western Asia, UN-ESCWA (2013),

the Middle East registered a higher rate of ICT spending than the global average; the annual average increase of ICT spending in the region during the period 2010-2012 was about 10 per cent, compared to about 8 per cent for the world. It is notable that this regional growth has resulted mainly from relatively high growth rates in four countries in the region, namely Morocco, Egypt, Saudi Arabia and the United Arab Emirates. (p. 6)

Table 2.2 Landscape for Fixed-Telephony, Fixed Internet Services, Mobile-Cellular And Mobile-Broadband Services in the GCC, ITU (2012)

GCC	Fixed telephony		Fixed Internet		
	Regulatory landscape	Service Providers	Regulatory landscape	Service Providers	Infrastructure providers (excluding LLU)
Bahrain	Competitive	More than 6	Competitive	More than 11	3 (including 2 Worldwide Interoperability for Microwave Access (WiMAX) providers)
Kuwait	Monopoly	1	Competitive	4	1
Oman	Duopoly	2	Competitive	2	2
Qatar	Duopoly	2	Duopoly	2	2
KSA	Duopoly	2	Competitive	50	3 (including 2 WiMAX providers)
UAE	Duopoly	2	Duopoly	2	2
	Mobile-cellular services		Mobile-broadband services		
	Regulatory landscape	Service Providers	Regulatory landscape		Service Providers
Bahrain	Competitive	3	Competitive		3
Kuwait	Competitive	3	Competitive		3
Oman	Competitive	2	Duopoly		2
Qatar	Duopoly	2	Duopoly		2
KSA	Competitive	4	Competitive		3
UAE	Duopoly	2	Duopoly		2

\*The data is collected from several tables (source: ITU, 2012) and combined in one table

The internet has meant some increases in political liberalisation and economic development in the GCC, and it is also starting to affect education. Now “the search for knowledge through higher education functions in the region both as an act of political faith and as a new paradigm for development” (Romani, 2009, p. 6), compared with the 1990s “when scholarly research on social, religious, cultural and ethical issues was severely restricted” (Morsi as cited in Romani, 2009, p. 6).

However, there are many barriers affecting use of the internet in the Arab world. These can be summarised in several points, as indicated by Alrawabdeh (2009): Arab governments and their reluctance to adopt this important project as one of their priorities, distribution of access and absence of mutual strategic cooperation to develop the use of the internet, the absence of the role of the ministries of education and higher education (training programs), a lack of private organisations (help in filling this gap), language factors and so on. Even with increased utilisation of the internet and other services provided by telecommunication companies, internet access is still costly in some regions; a report by ITU (2012) suggests that “prices in the Arab States as a whole are relatively expensive, with only Africa showing higher prices in relative terms” (p. 20). Some services are also blocked by



telecommunication companies at the behest of governments, and some of these companies have a monopoly on internet service delivery.

Many studies have also reported a host of barriers and/or challenges that prevent the use and adoption of the internet in education, including a lack of equipment, lack of confidence, lack of time, lack of institutional support and disbelief in ICT benefits (Al-Senaidi, Lin & Poirot, 2009). A recent report by UN-ESCWA (2013), identifies several challenges blocking the development of the ICT sector in the Arab countries, include lack of government incentive programmes; ineffective, non-existent or restrictive regulatory environments; inadequate ICT infrastructure; finance requirements and mechanisms; and economic constraints. More importantly, some of GCC are more open to other cultures and have improved the infrastructure of the internet, while others have strict rules regarding internet access and use. For example, many internet applications to the service in KSA are restricted on account of technical constraints (Alrawabdeh, 2009). The GCC is concerned about maintaining quality standards in e-learning and cyber-safety. The authorities are not allowing access to what they consider to be inappropriate content, libel, fraud or hacking, especially for children. There are strict rules and laws regarding internet access and use. The reason behind presenting these factors and challenges of using the internet in these countries is that they might be the same reasons that affect the use of online tools or social media such as Twitter in the GCC, particularly Oman. This is discussed further in depth in Chapter 3.

#### **2.4 Women and ICT Education in the GCC**

The situation of women in the GCC has been changing over time. Women now have more public roles in society; have an increased level of social participation; and are increasingly involved in work in different sectors. It is very important to outline the status of women regarding ICT in the GCC during the past few years, especially between 2000 and 2007. Therefore, a survey of some studies will be helpful to identify some issues regarding women and ICT.

For example, Hafkin (2002) reported several gender issues regarding ICT in developing countries: women tend to have less access to ICT facilities; difficulty in

access to communication facilities because the internet connectivity is available “only within capital and major secondary cities”; they are less likely to have the requisite education and knowledge especially in computer skills, information literacy and language. According to the United Nations Development Programme on Arab Human Development report (2005), “women are still concentrated in specialisations such as literature, the humanities and the social sciences” (p, 78), however it is notable that girls have moved towards scientific and high-tech fields. Another study by Joseph and Lunt (2006) investigated the status of women and IT in the GCC, reported that:

Though large numbers of females are enrolled in computing areas; the number joining the IT industry is proportionately low. The reason for this is mainly the fact that administrative jobs in the tech industry are decreasing, and most of the women in the IT workforce want to serve in administrative positions. (p. 29)

An important work on the status of women in developing countries was undertaken by Morrell, et al. (2007) who argued that women are poorly placed to benefit from ICT, they have less access to scientific and technical education and skills training and development. They indicated that there are more girls now in secondary and tertiary education, however, few are found in scientific and technical subjects. This may lead to gender gap in these societies. They also identified several barriers that contribute to this gender gap:

- Cultural and attitudinal barriers, such as perceptions about the role and status of women, emerge across countries, despite widely different circumstances.
- Situational barriers (e.g., lack of family commitment, lack of partner support, and living in rural or isolated areas)
- Qualification barriers (e.g., lack of formal math and sciences education or experience in computer programming skills is often perceived of as a barrier, both by admissions departments and by the students and teachers)
- Institutional barriers block women's access to scientific and technical education (e.g., lack of female teachers and the assumptions of male teachers). (p. 138)

All these factors and issues may impact on the way women adopt and utilise the technologies in the GCC. Limited access to advanced ICT and less access to skills training may result in a gender difference with regard to adoption of online tools. However, across the world “women can achieve a superior level of social participation in all countries given that their current levels of participation are significantly lower than those of men both inside and outside the ICT sector” (UN-ESCWA, 2013, p. 14). Outlining the status of women regarding ICT in the GCC, the research will also involve analysing the gender difference in adopting various online tools. Gender issues are discussed further in depth in sections 3.6 and 3.8.

## 2.5 Sultanate of Oman

### 2.5.1 Oman: General Background

The official name of Oman is ‘Sultanate of Oman’. The Sultanate of Oman is a member of the GCC, and it is located in Southwest Asia. It borders the UAE in the northwest, the KSA in the west and Yemen in the southwest (see Figure 2.3).

Figure 2.3 Map of Oman



Retrieved from <http://aes.iupui.edu/rwise/countries/OmanMap.jpg>

Oman’s location has been strategically important; Oman partially controls the Strait of Hormuz, which is the only sea route through which oil from Iran and GCC member states can be transported. Oman's climate is hot and dry in the interior and humid along the coast. Oman covers a total land area of approximately 300,000

square kilometres. The country's coastline stretches for over 1,700 kilometres, from the Arabian Sea and the entrance to the Indian Ocean at its south-western extremity (Ministry of Information, 2012). Oman is divided into nine governorates (*muhafazat*), which are: Al Dakhliyah, Al Dhahirah, Al Batinah (Al Batinah North and Al Batinah South), Al Buraymi, Al Wusta, Al Sharqiyah, Dhofar, Musandam and Muscat (Capital of Oman). Most of Oman's population lives in Al Batinah province and Muscat. According to Oman's General Census of Population, Housing and Establishments 2010, the total population of Oman has increased to 2,773,479 compared to 2,340,815 in 2003. The total number of Omanis according to the latest census is 1,957,336 compared to 1,781,558 in 2003. Expatriates in the country numbered 816,143 in 2010 compared to 559,257 in 2003. Most expatriates work in the private sector and business organisations while others work in the public sector including the field of education.

As a GCC member, Oman operates as a monarchy, the leader of which is currently His Majesty Sultan Qaboos bin Said, who was born in Salalah in Dhofar on 18 November 1940 and acquired the throne in 1970. Since his ascension, the true development and modernisation of Oman began. The Sultan's priorities include providing education for all by enhancing and developing the field of education and encouraging Omani people to study abroad. According to the Ministry of Information (2012), Sultan Qaboos bin Said introduced a series of five-year plans to enhance Oman's status in the eyes of the world and to transform the Omani economy. For example, the first five-year plan (1976-1980) focused on investment in all of the manufacturing and services sectors by completing basic infrastructure and supporting local commercial activity; and the eighth five-year development plan (2011-2015), focuses on development of basic industries and small and medium industries.

### ***2.5.2 ICT and the Internet in Oman***

The website [www.Omanet.com](http://www.Omanet.com) is an official source of information on the Sultanate of Oman. The site was established in November 1996 by the Ministry of Information, Government of Oman, and it is available on-line in both Arabic and English. The domain name was changed to [www.omanet.om](http://www.omanet.om) in February 2004 (Ministry of

Information, 2012). The Telecommunications Regulatory Authority (TRA) was established in 2002; it is responsible for regulating the telecommunications market in Oman and imposes obligations on telecommunication service. The Information Technology Authority (ITA) was set up in 2006 by the government of Oman; it regulates the IT market, and it is responsible for implementing national IT infrastructure projects and supervising all projects related to the implementation of the Digital Oman Strategy (ITU, 2012).

The Oman Telecommunication Company (Omantel), previously the General Telecommunications Organisation, is owned by the government. Omantel started offering telecommunications services in 1970 and internet service in 1997 (Alqudsi-ghabra, Al-Bannai & Al-Bahrani, 2011), when the internet was launched with Dialup Service. Omantel is the first telecommunications company in Oman, and it was for some time the country's sole internet service provider (ISP). It regulates internet use in Oman through Omantel's terms and conditions, which strictly regulate internet use, mandating citizens not to engage in any unlawful activities against or contradict the religious (Islam, Christianity, Jewish, etc.), political (internally or externally), social, cultural or economical values of Oman or cause potential harm to any third party. Nawras is another telecommunication company that commenced offering telecommunications services in 2005. Most Omani people have access to telephone lines, mobile and fixed-line services. By 2006, "the mobile and fixed telephone systems provided coverage to almost 95% of the populated areas in Oman" (Al-Aufi, 2007, p. 17). Asymmetric Digital Subscriber Line (ADSL) service was introduced in Oman in 2004.

Nawras was first provided 3G (third-generation mobile technology) in 2007, and Omantel followed suit in 2009. They also began providing 3G+ (enhanced third-generation mobile technology). "Nawras was the first operator to launch mobile TV services in January 2009, followed by the incumbent Omantel in March of the same year" (ITU, 2012, p. 92). According to statistics found on the Internet World Stats site (2012), the number of the internet users in Oman increased significantly in 2011 compared to 2000 (Table 2.3).

Table 2.3 Internet Users, Population Statistics, Oman

Year	Users	Population	% Pop.	Usage Source
2000	90,000	2,424,422	3.8 %	International Telecommunication Union ITU
2002	180,000	2,398,545	7.5 %	
2005	245,000	2,424,422	10.1 %	
2008	300,000	3,311,640	9.1 %	
2009	557,000	3,418,085	16.3 %	
2010	1,236,700	2,967,717	41.7 %	
2011	1,741,804	3,027,959	57.5%	

\*Source: Internet World Stats, 2012 <http://www.internetworldstats.com/me/om.htm>

According to other statistics found on the Internet World Stats site (2012), there are 1,367,220 Omani Facebook users as of 31 December 2011, representing 33% penetration. Facebook and YouTube are very popular social media tools among people in Oman and Google is a very popular search engine among them. It can be observed that Omani people tend to use these tools or similar online tools such as s-oman.net and omaniaa.net, which are local online forums.

In terms of mobile networks, in the recent years, mobile penetration has continued to grow in Oman. According to Callanan and Dries-Ziekenheiner (2012), mobile networks are the preferred delivery method for content. They provide statistical information on mobile phone as follows: there are around 4,809,248 mobile service subscribers in Oman, and 1,226,442 active mobile broadband subscribers which is around 25% of all mobile phone subscribers in the country. Almost 92% of internet users “owned a smartphone and there is widespread use of the latest smartphone handsets”. Callanan and Dries-Ziekenheiner (2012) also reported that smartphones especially Samsung smartphones are becoming increasingly popular in Oman. The total numbers of Short Message Service (SMS) messages continue to grow. The internet-based messaging services for mobile messaging application for iPhone, BlackBerry, Android are becoming increasingly popular in Oman, for example, WhatsApp is popular internet-based messaging services among Omani People.

With regard to the internet connection type, 2010 survey as reported by the Callanan and Dries-Ziekenheiner (2012), found that 91% of internet users used mobile internet. “Of these, 40% used WiFi to access the internet, with 48% paying for a limited volume of data with their subscription, and a further 9% paying for usage”. The main uses of the internet were as follows: 29% use it to access primarily text

content (websites, emails), 24% use it to transmit text content (emails, social networking), 18% use it to access content with many images, 17% use it to access audio/visual content, and 12% use it to transmit audio/ visual content.

Oman is looking to develop information technology and telecommunication industries by investment in this area (Ministry of Information, 2012). Oman invests heavily in ICT infrastructure as a part of economic development. It intends to enhance internet access through broadband, 3G, and recently 4G mobile technologies. Many initiatives have been proposed to enhance information technology and the internet in Oman. Some of these projects have been completed, and some are on-going. Examples of these projects according to ITU (2012) include:

- Omantel 3G network was completed in March 2009: Omantel launched the country's second 3G network. The operator did not need an independent license to deploy 3G, since class 1 mobile licenses in Oman are technology neutral.
- Nawras Worldwide interoperability for microwave access (WiMAX) Network was completed in November 2008: Oman's TRA granted Nawras Telecom the second 'class-one' fixed license in Oman. Nawras launched its business fixed operations in May 2010, and its residential fixed operations in July 2010.
- Oman Water Services Company installing Fibre is an on-going project: Oman's Water Services Company is installing a fibre network in its sewage ducts in order to lease these connections to telecommunication operators (most probably Omantel and Nawras).

However, many factors could block development and usage of the internet in Oman. Alqudsi-ghabra et al. (2011) reported that "lack of competition, lack of a well-developed information infrastructure and high prices have caused the relatively slow spread of the Internet in Oman" (p. 51). Al-Gharbi and Ashrafi (2010) reveal a number of factors that contribute to the reluctance to adopt online tools and technologies in Oman, especially in Omani private sector organisations. Some of these reasons/barriers are lack of awareness of the benefits of using internet in the workplace and security concerns. All explicit Arabic and English content that is critical of Islam is filtered; this includes filtering of pornography and gay and lesbian

content, violence content, libel, fraud or hacking, as well as sites about illegal drugs. Technical filtering is imposed in some counties for preventing access or publishing any objectionable or unlawful material. “These existing laws, regulations and practices create self-censorship among writers and publishers, both offline and online”. (Alqudsi-ghabra et al., 2011, p. 51). This is an important issue which is related to censorship. Some services are not licensed by the TRA in Oman. For example, Skype is blocked and cannot be used by subscribers in Oman without relying on circumvention tools. One of the primary reasons for this is government’s concern that VoIP services will affect the profits of Omantel. (Callanan & Dries-Ziekenheiner, 2012)

### ***2.5.3 Higher Education in Oman***

In 1970, there were three schools in Oman, with 30 teachers and just over 900 students. There are now over 1000 schools in Oman, 90% of them government-run. The ministry of education takes all responsibility for developing and enhancing education and supporting all schools with the latest technologies and resources. Curricula have been changing rapidly to include comprehensive introduction of these technologies and new courses based on community needs. General education is available to all Omani nationals. Basic Education curriculum consists of three stages: primary, preparatory and secondary. When students complete their secondary education successfully, they can go on to advanced training at specialist colleges, or join private colleges and universities or enter SQU (based on their grade in the General Secondary School Certificate). All government colleges, universities and institutions of higher education are funded by the Oman government and are free of charge to Omani nationals. Three stages can be recognised in the development of education in Oman, as indicated by Rassekh (2004):

1. Stage one emphasized the rapid quantitative development of education;
2. Stage two started in the early 1980s, when the Ministry of Education initiated serious efforts to improve the quality of education; and
3. Stage three began from 1995, after the Conference on Oman’s Economic Future, Vision 2020, when a number of reforms were introduced in order to cope with the educational requirements of the future. (p. 8)



All universities, colleges of education, specialist colleges and private academic institutions in Oman are operated and supervised by the Ministry of Higher Education, which is responsible for the development of higher education. The Ministry of Higher Education aims to ensure quality higher education meets the requirements for sustainable development in Oman. According to the Ministry of Higher Education website, it takes all responsibility and strives to meet all requirements and needs in order to develop the Omani community in the knowledge era, while preserving the cultural identity of Omani society.

The private sector has played a significant role in the development of higher education in Oman. They participate in accommodating student demands for higher education. While there is only one public university in Oman which is SQU, the Omani government encourages and supports private college and university involvement in developing higher education. It offers the opportunity for the private sector to participate in this field of education by providing them with many facilities. “The private colleges are entitled to receive partial financial support and other government assistance including the provision of land and exemption from some tax obligations” (Al-Aufi, 2007, p. 19).

The number of private universities and colleges has increased dramatically from 2000 to 2011. Currently, there are seven private universities in Oman including Sohar University (2001-2002), Nizwa University (2004-2005), Dhofar University (2004-2005), German University of Technology in Oman (GUtech) (2007-2008), Arab Open University-Oman branch (2007-2008), University of Buraimi (2010-2011) and A'Sharqiyah University (2010-2011). According to the Ministry of Higher Education (2012), there are nineteen private colleges in Oman including Majan College (1995-1996), Modern College of Business & Sciences (1996-1997), Caledonian College of Engineering (1996-1997), Al-Zahra College for Girls (1999-2000), Mazoon College (1999-2000), Oman Medical College (2001-2002), Sur University College (2001-2002), Waljat College of Applied Sciences (2001-2002), Middle East College of Information Technology (2002-2003), Al-Buraimi College (2003-2004), Scientific College of Design (2004-2005), Oman College of Management & Technology (2004-2005), Gulf College (2004-2005), Muscat College (1997-1998), The Fire Safety Engineering College (1998-1999), Oman Tourism and

Hospitality Academy (2001-2002), International Maritime College Oman (2005-2006), Bayan College (2006-2007) and Oman Dental College (2006-2007).

Most of these colleges and universities are affiliated with Universities in the UK, USA, Australia and India. Governmental regulation requires private institutions of higher education to affiliate with recognised foreign universities. According to Al Harthy (2011), “the importance of the academic affiliation agreement is to assist the private institution in all technical and educational areas, including curriculum development, follow-up and evaluation of colleges’ and universities’ academic performance, and the awarding of degrees” (p. 103). There has also been a substantial increase in the number of scholarships awarded to students as well as staff in different institutions to study in-country, as well as abroad. This includes undergraduate and graduate studies.

#### ***2.5.4 Sultan Qaboos University***

The first public university in Oman was Sultan Qaboos University, which officially opened in 1986. It is located in the capital of Oman, Muscat, and it is the only state university in the Sultanate of Oman. The University commenced with five colleges, namely Medicine, Engineering, Agriculture, Education and Science. Four more colleges were established later the College of Arts, which was established in 1987, followed by the College of Commerce and Economics, which was developed in 1993. The College of Law joined the University in 2006, and finally the College of Nursing was established in 2008. Currently, there are nine colleges at the University with 66 departments and 922 faculty staff. The SQU has developed plans for scholarships for academic staff as well as non-academic staff to study abroad. This includes English-speaking countries and non-English-speaking countries, for example US, UK, Canada, Australia, New Zealand, Japan and Singapore.

As the only Government University in Oman, the University has attracted a large number of students. According to statistics found on the SQU website, the total number of students enrolled at SQU increased from 567 in academic year 1986/87 to 14,640 in academic year 2007/08. The total number of students enrolled at SQU during the academic year 2009/2010 was approximately 17,000. The University

provides various services and facilities for students as well as academics to promote the teaching and learning at SQU. For example, it provides them with seven support centres, including the Centre for Community Service and Continuing Education (CCSCE), which aim to extend educational and community services to the largest possible part of the community; the Centre for Information Systems (CIS), which aims to develop, maintain and run SQU's computing infrastructure and to provide and to support SQU's computer-based information systems; and the Centre for Educational Technology (CET), which intends to “enhance teaching and learning at SQU through supporting faculty members and departments with the latest technologies in teaching and encouraging the adoption of best instructional practices” (SQU, 2012). Other support centres include human resources and staff development, Language Center, Center of Career Guidance and student counselling. In addition, it provides seven research centres and many laboratories in all colleges. The research centres include Humanities Research, Excellence in Marine Biotechnology, Communication and Information Research, Earthquake Monitoring Research, Environmental Studies and Research, Oil and Gas Research, Omani Studies, Remote Sensing GIS and Water Research.

In order to provide a comprehensive and balanced range of high-quality information resources, SQU has four libraries. The main academic library (Main Library) provides a range of services to support academic education and educational and research needs, including databases, e-book, e-journals and e-references. Other libraries include Medical libraries, which serve students and academics in the College of Medicine, as well as staff of the University hospital; Library of the College of Art and Social Sciences, which focuses on services specific to the needs of students and academics in the college; the Information Centre, which is located within the College of Commerce and Economics and serves the students and business faculty at the college and, finally, the Mosque Library (Library of Masjid), which provides a diversified collection of Islamic books and other Islamic items.

The internet was made available to SQU late in 1997. The CIS supports academic and research activities, administrative needs and clinical and diagnostic work. It provides various resources including hardware, software, networks and other support facilities. To use these resources and the internet, users must respect University

regulations as well as national/international law. The use of the internet facilitates learning processes for students. It has become a main resource for students with respect to learning; Amer (2004) found that 71% of undergraduates in Oman use the internet as a source of reading materials.

The advancement of technology is one of the most apparent trends affecting education at SQU. SQU has used the internet to increase e-education. LMSs such as Blackboard, WebCT and Moodle are used for teaching and learning in higher education institutions around the globe. E-learning using WebCT was implemented at SQU in 2001. Two years later, the number of online courses increased from eight to 40, and the number of students enrolled in these courses increased from 981 to 3,001 (Al Musawi & Abdelraheem, 2004). Over that time, the CET at SQU conducted many workshops in order to demonstrate the functionality of the WebCT package and how to use it to design online teaching materials. Two negative points were reported by students regarding e-learning instruction, as indicated by Al Musawi and Abdelraheem: Internet delays and interruption of WebCT service, and difficulties encountered in using onscreen materials for learning. These factors can be connected to a lack of technical support and the lack of quality of the internet connection. However, many students also found themselves learning better and understanding more of the course material by using these technologies (Naqvi, 2006).

WebCT was replaced by Moodle, which supports teaching and learning processes. Since 2005, Moodle has become a major technology used in SQU by educators to create quality online content and to present course materials. It has gained the interest of some researchers at SQU. For example, Ahmed and Al-Khanjari (2012) explored the effect of Moodle on students learning in a particular course at SQU, and they found that the students were comfortable using Moodle overall. Students reported that Moodle helped them in better understanding and learning the course material, however they preferred face-to-face approach. In 2012, the University introduced the new version of Moodle, which has new characteristics (wikis, YouTube, blog, chats, forums, etc.) and additional features. In addition, the CET at SQU offers many workshops each year for all academic staff in order to introduce new technologies in education.

In order to enhance student learning outcomes for English, Mathematics, IT and Study Skills, the university established a new Foundation Program (FP) for the students who join the university. These programs help students to learn better and to have necessary skills before entering the colleges at SQU. FP started in 2010 with several goals. According to SQU, FP website, the main objectives of this program are to develop English language proficiency and provide mathematical and analytical techniques necessary skills for new students, basic knowledge of computer applications, in order to prepare them with these skills before they entering to their courses, and to create an effective learning and interaction.

## **2.6 Information Studies Department**

### ***2.6.1 Information Studies Departments in the Arab World and GCC***

There are about 40 academic departments for libraries, archives and information science in the Arab world; they are distributed as follows: Egypt (17), KSA (5), Sudan (3), Jordan (2), Lebanon (2), Kuwait (2), Algeria (1), Tunisia (1), Oman (1), Morocco (1), Libya (1) and Iraq (4). Other sources showed that there are 33 schools providing studies in librarianship and information studies at various levels in Arab countries. Egypt could be called the land of library education. Academic study in the field of LIS in Egypt did not start until 1951 (Halgawy & Aman, 1992), but the development of library education has a long history. According to Halgawy and Aman (1992):

The Egyptian Library Association was founded in 1944 and arranged one-year training courses for those who had already completed their secondary education to qualify them to be assistant librarians. In January 1951 the Higher Institute for Archives and Librarianship was established at Cairo University. It was a four-year evening study offering a diploma in librarianship and archives. (p. 255)

In the GCC, there are eight LIS programs. Of these, five are located in KSA, two are at universities in Kuwait and the remaining one is in Oman. No LIS departments are available in the UAE, Qatar and Bahrain. In Qatar in 2012, the Department of Mass Communication and Information Science has changed to Mass Communication and

it no longer offers programs in library sciences. The GCC universities that do offer graduate and undergraduate programs in LIS, including B.A., M.S. and Ph.D. degrees, see those programs growing in size, number and scope. Table 2.4 summarises these departments within GCC universities and institutions:

Table 2.4 Number of LIS Departments in the GCC

GCC	Universities	Colleges	Departments	Number of academic staff
<b>Oman</b>	Sultan Qaboos University	Art & Social Sciences	Information Studies	17
<b>KSA</b>	Imam Muhammad Ibn Saud Islamic University	Computer & Information Sciences	Information Studies	14
	King Abdul Aziz University (KAU),	Art & Social Sciences	Information Sciences	1*
	UMM Al-Qura University	Social Sciences	Information Sciences	49
	King Faisal University	Arts	Library and Information Sciences	*
	King Saud University	Arts	Library and Information Sciences	15
<b>Kuwait</b>	Kuwait University	Social Sciences	Library and Information Sciences	18
	The public authority for Applied Education & training	College of basic Education	Library and Information Sciences	20*
<b>Bahrain</b>	-	-	-	-
<b>Qatar</b>	-	-	-	-
<b>UAE</b>	-	-	-	-
<b>Total</b>	8	8	8	153*

\* This data was collected from GCC universities' sites

### 2.6.2 Information Studies Department in Oman

Library education in Oman started as early as the middle of 1987, when the first Department of library science was established at SQU. At first, the department was named, 'Department of Library Science and Documentation' and was part of the College of Arts at SQU. "Before the foundation of the Department of Library and Documentation, the Institute of Public Administration offered a short training course for those already working as librarians" (Al-Mufaraji, 1992, p. 476). Since then, the Department has changed to Library and Information Sciences. In 2009, the Department name changed again to Information Studies and offered new programs to meet the needs of the marketplace and the needs of Omani society for qualified specialists in this field.

The Department offers multidisciplinary courses including: information and knowledge management, information organisation, computer literacy and applications, information technology, databases and systems, internet and research searching and information retrieval, an introduction to statistical data analysis, documentation and archiving, information sources, information services and other topics related to the specialisation and associated disciplines. Currently, the Department offers four academic programs: the Bachelor's degree in LIS; the Master's degree in LIS, the Higher Diploma in Medical Librarianship and a PhD in Information Studies. The Bachelor's degree in LIS offers three majors: Management of Archives, Management of Information Institutions and Management of Learning Resource Centres.

The Department pays special attention to students' needs with rapid development of ICT and provides them with practical applications of ICT. The department also provides students with three laboratories: Informational Technology Lab, Bibliographical Lab and Children's Literature Lab, in order to increase particular training to qualify them and give them the opportunity to work in public, university and special libraries, in addition to learning resource centres in both public and private sectors. According to the DIS website, the Department aims to provide skills for organising information and managing information in institutions, including libraries and learning resource centres; to contribute to research by organising seminars, conferences and scientific meetings; to conduct and organise workshops to prepare information professionally after graduation. It also seek to contribute to intellectual and scientific activities whether on campus or off campus; to cooperate with different academic departments at SQU and other universities in order to provide services regarding the use of various information sources, search strategies on the internet, databases and catalogues and research methods; and to expand cooperation and activities with GCC, Arab countries and foreign universities and scientific institutions regarding scientific research, training, etc.

There are 17 academic staff and two main training supervisors in the department. Most academics obtained their degree from the following countries: US, UK, Australia, France, Egypt and Iraq. Some teach courses related to the internet and IT, whereas others are more concerned with subjects related to libraries and archives.

The Department has two training supervisors who are responsible for managing the ‘practical training’ for the final year students, and for assessing student work. However, these individuals also participate in teaching some subjects (practical part). Academic staff are also supported by college technicians in teaching. The curriculum development committee at the Department is responsible for developing and updating the curriculum, and every member of the Department is asked to contribute to the development of the syllabus. The Department has made good progress in past years regarding the level of employer satisfaction with graduate skills and knowledge in LIS.

The total number of students enrolled in Bachelor degree programs in LIS from 1978 to 2011 is indicated in Table 2.5. The number of students graduating from the Department up to and including 2011 is 1,160.

Table 2.5 Number of Students in Bachelor’s Degree Programs in LIS

Year	Gender		Total
	F	M	
1987	7	17	24
1988	16	13	29
1989	9	17	26
1990	13	15	28
1991	18	7	25
1992	14	4	18
1993	10	9	19
1994	16	4	20
1995	12	7	19
1996	16	16	32
1997	18	29	47
1998	14	32	46
1999	23	33	56
2000	44	34	78
2001	55	29	84
2002	33	20	53
2003	33	18	51
2004	40	16	56
2005	44	13	57
2006	48	31	79
2007	46	5	51
2008	48	14	62
2009	46	20	66
2010	44	11	55
2011	70	9	79
Total	737	423	1160

The program for a Higher Diploma in Medical Librarianship commenced in 2003. Table 2.6 shows the number of students enrolled in this program in 2003, 2006 and



2009. Higher Diploma in Medical Librarianship was the first program in the Arab countries intended to provide educational support information to help students acquire a better understanding of health information, knowledge and services. This program was established in response to a request from the Ministry of Health. The candidates are selected by the Ministry of Health according to criteria and requirements set up in collaboration with DIS. The candidates for this program are selected from holders of Bachelor's degree in health sciences, microbiology, medical laboratory sciences and biochemistry. The job titles of graduates are medical librarians or medical information specialist.

Table 2.6 Number of Students in the Higher Diploma in Medical Librarianship Program

<b>Gender</b>			
Year	F	M	Total
2003	7	1	8
2006	6	1	7
2009	9	-	9
<b>Total</b>	<b>22</b>	<b>2</b>	<b>24</b>

The Master's degree in LIS was first offered in 2004. Table 2.7 shows the number of students enrolled each year.

Table 2.7 Number of Students at Master's Degree in LIS, 2004-2011

<b>Gender</b>			
Year	F	M	Total
2004	3	7	10
2005	2	5	7
2006	1	3	4
2007	3	3	6
2008	4	1	5
2009	4	1	5
2010	3	2	5
2011	8	4	12
<b>Total</b>	<b>28</b>	<b>26</b>	<b>54</b>

Students graduating from this department work in the following institutions and organisations in Oman: the Ministry of Education (MOE) in Sultanate of Oman (schools), Ministry of Higher Education (colleges and universities), Ministry of Manpower (colleges of technology), Royal Court Affairs (libraries), Ministry of Heritage and Culture (libraries), Royal Oman Police (libraries), and other government sectors.

## **2.7 Online Tools Growth and Developments in the Arab World**

As cited frequently in the literature, the term ‘Web 2.0’ was first coined and conceptualised by Tim O’Reilly and Dale Dougherty in 2004 (O’Reilly, 2007). Chapter 3 will delve more deeply into this while also reviewing current literature regarding the ambiguity and lack of clarity of the concepts describing ‘Web 2.0’. Originally, the World Wide Web (WWW) was invented by Tim Berners-Lee in 1989 (Berners-Lee, 2001), and it was based on sharing ideas and promoting discussion within a scientific community (Kamel Boulos & Wheeler, 2007). It is worth providing a brief description regarding various online tools before describing the status of these tools in the GCC.

Facebook was founded by Mark Zuckerberg in 2004 and it is one of the largest social networks in world. Facebook claims to add 250,000 new members per day, as indicated on the Facebook site (Cohen, 2008). It is a popular site for networking, finding new friends and sharing photos, information and knowledge. LinkedIn and Academia.edu are professional networks or professional SNSs, providing new opportunities for updating and following other researchers. LinkedIn was founded in 2003 and focuses on professional users creating networks of co-workers (O’Murchu, Breslin & Decker, 2004). It allows people access to other professionals, jobs, news and updates, while Academia.edu is more about placing, sharing and following research. According to the LinkedIn site (2012), it is the world’s largest professional network, with 200 million members in 200 countries and territories around the globe. According to Academia.edu site, 2,388,241 academics have signed up to Academia.edu, adding 1,652,601 papers and 709,556 research interests. Wikipedia is a free encyclopaedia built collaboratively using wiki software, which allows anyone to edit or add content. There are around 17,213,435 registered users, 4,015,330 content entries, 27,813,309 pages, 789,387 uploaded files and 547,602,240 page edits since Wikipedia was set up (Wikipedia, 2012). Twitter is an information network, helping people connect to the latest stories, ideas, opinions and news (Twitter homepage, 2012). It was “launched in 2006, and becoming increasingly popular since 2007” (Leaver, 2012, p. 98).

YouTube is another popular site, which allows people to discover, watch and share videos. According to the site, YouTube was founded in February 2005 and now is localised in 43 countries and across 60 languages. According to statistics found on the YouTube site (2012), over 800 million unique users visit YouTube each month; over 4 billion hours of video are watched each month, 72 hours of video are uploaded to YouTube every minute; and 70% of YouTube traffic comes from outside the US. Regarding mobile and devices, the site claimed that traffic from mobile devices tripled in 2011, and more than 20% of global YouTube views come from mobile devices; 3 hours of video is uploaded per minute to YouTube from mobile devices, and YouTube is available on 350 million devices. With regard to social practice, the site reported that 500 years of YouTube video are watched every day on Facebook, and over 700 videos are shared on Twitter each minute; 100 million people perform a social act on YouTube every week.

The emergence of online tools has opened new opportunities for Arabs to communicate efficiently and effectively. Followers of internet development in Arab world can observe different periods of internet improvement. The development of online tools in terms of motivating interactivity and social movements to explore behind the internet is observable. The internet has transformed into a platform providing Arab people with collaborative access to a wide range of media and services that they now use on a daily basis. These services and media have been used in different sectors and purposes including business, education and entertainment. People in Arab countries now participate in Google, Facebook, blogs, Wikipedia, Twitter and YouTube among others. According to the Arab Social Media Report, ASMR (2011), there are 36 million Arab Facebook users and a quarter of those users come from Egypt. The most active populations on Twitter are found in Kuwait, KSA, Egypt, the UAE and Bahrain. The largest numbers of bloggers in the Gulf were found in KSA and Kuwait (Alqudsi-ghabra et al., 2011). Malin (as cited in Rabah, 2010) presents some statistics regarding use of SNSs in the Arab world as follows:

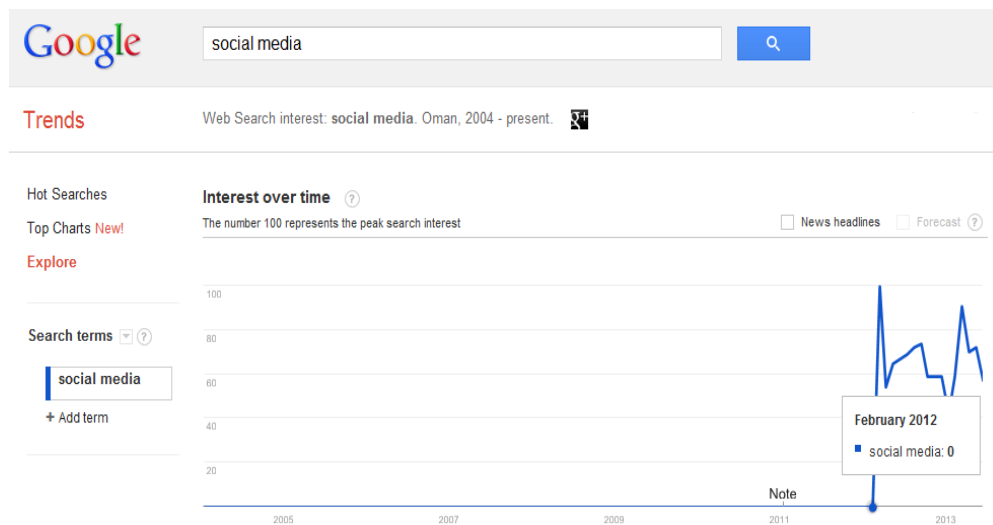
...the introduction of an Arabic interface for Facebook in March 2009 prompted 3.5 million users to join the service in the Arab world, with Egypt and Saudi Arabia showing the strongest growth. More than 3.4 million Egyptians have Facebook accounts, along with 2.3 million Saudis and 1.8

million Moroccans. Along with Tunisia and the UAE, these five countries account for 70% of Facebook users in the Arabic-speaking Middle East...In common use with Facebook across the region, Egypt, Saudi Arabia and the UAE's have the three largest Twitter communities, 1741 users, 1405 users and 4952 users respectively. More than 90% of Twitter users are Facebook users, while 76% are also users of business networking website LinkedIn. Friendfeed (21%), MySpace (15%) and Xing (14%) are the next most popular social media. (p. 127-128)

The popularity of these tools is in itself commentary on how recent events in the Arab world have affected users' work, participation in activities on the internet and use of internet applications. Various online tools with availability of smart mobile phones played a major role in facilitating these citizen-based movements. It is worth noting that 2011 and 2012 have been critical points for Arab people to move towards utilising online tools for personal, professional and education purposes. For example, in 2011, the first Arab revolution ('Arab spring') began in Tunisia. It was the first time Arabs toppled one of their dictators (Eltahawy, 2011). Tunisians used Facebook to share information, communicate with other Tunisians and to disseminate information to the populace. Social media such as Facebook and Twitter were used to organise protests. Some Arab nations have used Facebook, Twitter, YouTube and other online tools to watch, upload and download video related to the incident. The revolution then spread to Egypt, Libya, Yemen, Morocco and GCC, including Oman, Bahrain, Kuwait and KSA, spreading at an unprecedented rate because of online tools and because of the way people shaped and used these technologies for different purposes.

The use of these tools and the term social media increased significantly in these countries. For example, in Oman, by utilising Google Trends to show how often social media term was entered or searched, it can be noted that this term significantly increased in February, 2012 in the time of Arab revolutions. The advent and impact of the internet and new media technologies in the Arab region has affected users' activities and participation on the web (Abdulla, 2010; Jamal & Melkote, 2008). This participation and contribution changes the way people interact with the internet.

Figure 2.4 Google Trends of Web Search Interest: Social Media. Oman, 2004 - present



The use of these technologies might increase in future for different purposes and due to changing attitudes of Arab people. Smartphones like iPhone and BlackBerry have been increasingly used in the GCC. These contribute to utilising the internet for different purposes; however, according to Alqudsi-ghabra et al. (2011):

..Internet access through the Blackberry has been filtered since December 2009. Today, over 500,000 people in the UAE use BlackBerrys. Restricting these BlackBerrys tarnishes the modern image that the UAE works hard at maintaining and projecting to the outside world. Yet the fear of these smartphones' potential in mobilizing dissatisfied citizens and masses has grown in the area, particularly in the aftermath of the Arab Spring movement ...Reporters Without Borders' report section on Internet Enemies (2011) state that, in Saudi Arabia, where BlackBerry phones are popular, pressures from authorities threatening to block the BlackBerrys' instant messaging service led RIM, the BlackBerry manufacturing company, to agree in August 2010 to install a server in Saudi Arabia. This was done to enable Saudi authorities to gain court-ordered access to certain messages, a fact that worries users of these smartphones. (p. 65)

According to ASMR (2011), most news/information on the events during the civil movements in Egypt and Tunisia came from social media sources (e.g., Facebook, Twitter, etc.). According to statistics found on the Internet World Stats site (2012),

the number of Facebook users in the GCC shows significant increase. It also showed that Facebook is very popular among Arabs; KSA and the UAE have the largest number of users, more so after the introduction of the site's Arabic landscapes. ASMR (2011) indicates that the GCC countries (with the exception of KSA) primarily prefer to use English on Facebook in addition to Arabic and French. The sites most visited by people in the Arab countries are Facebook, YouTube, Google and similar online blogs and forums, whether local or global (ITU, 2012). The ITU report listed the 20 websites most visited by people in Arab countries in December 2011; summarising these statistics, the ranks of these applications out of 20 popular sites are given in the below table (Table 2.8).

Table 2.8 Brief Summary of the Most Popular Visited Sites in the Arab Countries

	Google	Facebook	YouTube	Twitter	LinkedIn	Wikipedia	blogspot.com
Algeria	1	2	3	-	-	10	9
Bahrain	1	2	3	7	-	9	8
Egypt	2	1	3	15	-	18	7
Iraq	2	1	3	-	-	11	10
Jordan	2	1	3	13	20	11	9
Kuwait	2	3	1	7	-	10	8
Lebanon	3	1	2	8	14	7	12
Libya	2	1	3	20	-	13	9
Mauritania	2	1	3	-	-	-	19
Morocco	3	1	2	-	-	11	9
Oman	1	3	2	-	-	10	12
Qatar	1	2	3	10	17	9	7
KSA	1	3	2	10	-	17	9
Sudan	2	1	3	-	-	15	12
Tunisia	2	1	3	13	-	9	7
Yemen	1	2	3	13	-	14	6

\*The data is collected from different tables (source: ITU, 2012) and combined in one table

Table 2.9 presents the top 20 most visited online web portals by internet users in Oman, as reported by ITU (2012). ITU (2012, p. 93) reported that “the adoption of Arabic online content remains behind the adoption of content offered by global sites, such as Google, YouTube and Facebook. The pioneer local portal is a forum website, which is the sixth most visited site by Omani Internet users”.

Some of the barriers and challenges that could inhibit this uptake of social networking can be found in the telecommunication companies' monopoly of the market. There is an effort to increase competition in local markets; lack of

equipment, lack of institutional support, distrust in ICT benefits, lack of confidence and lack of time are critical barriers to applying ICT in teaching practices in the GCC, including Oman. Internet Filtering and blocking of useful sites that can contribute in education can delay development; and cultural attitudes and behaviours might also be a factor.

Table 2.9 Top Twenty Most Visited Online Web Portals by Internet Users in Oman

Rank	Website	Target users	Default language*	Description
1	google.com.om	Global	Arabic	Web search portal
2	Youtube.com	Global	English	Video sharing and broadcasting portal
3	Facebook.com	Global	English	Online social networking
4	google.com	Global	English	Global web search portal
5	live.com	Global	English	E-mail portal
6	s-oman.net	Local	Arabic	Online forums
7	yahoo.com	Global	English	Miscellaneous online services
8	msn.com	Global	English	Miscellaneous online services
9	maktoob.com	Regional	Arabic	Miscellaneous online services
10	wikipedia.org	Global	English	Encyclopedia
11	moe.gov.om	Local	Arabic	Online portal of the Ministry of National Economy
12	blogspot.com	Global	English	Online blogging service
13	4shared.com	Global	English	Online storage
14	Kooora.com	Regional	Arabic	Sports
15	omaniaa.net	Local	Arabic	Online forums
16	babylon	Global	English	Translation software
17	forum.moe.gov.om	Local	Arabic	Online forum of the Ministry of National Economy
18	Mediafire.com	Global	English	File sharing services
19	squ.edu.om	Local	English	Online portal of Sultan Qabous University
20	conduit.com	Global	English	Network of web and mobile app publishers

Note: \*The default language is the language that appears when first visiting the website

Source: ITU, (2012), [http://www.itu.int/dms\\_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf](http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf)

It is critical to explore the direction and rate of online tools and their outcomes, whether in professional and personal uses or teaching and learning purposes. These points are the key driver for this research project: focusing on the role of various online tools in university education within the GCC and using as a case study the various online tools teaching and learning practices of the ISD in Oman.

## Chapter 3 Review of the Literature

### 3.1 Introduction

The central objective of this research is to investigate the attitude of academic staff as well as students within the DIS at SQU in Oman towards adopting and shaping online tools in their teaching and learning. While there is much talk of online tools and social software in developed countries, there has been little research regarding adopting and using these tools in the GCC. A common understanding of these technologies is not yet in existence, and the actual use of them in teaching and learning as well as for professional purposes in the academic community is not clear. Present research focuses on teaching and learning context-specific context-GCC. The existing literature presents evidence of research that investigates the phenomenon of 'Web 2.0' and online tools in teaching and learning, focusing in three contexts; teaching, professional and personal, experienced by academics and students.

This Chapter starts by describing the key literature on the subject of online tools including the ambiguity of 'Web 2.0' label, focusing on two important aspects: the label 'Web 2.0', and web categorisation and cultural practices. Online tools as open platform for graduates versus traditional LMSs are discussed. The Chapter reviews and summarises the existing literature on the use of online tools in three contexts: personal; professional; and teaching and learning. This includes academic community knowledge of online tools and communication and collaborative learning within these tools. The Chapter also reviews the existing literature on LIS education regarding adopting and using these technologies within LIS education. The Chapter presents an overview of SST theory relevant to the current study, and highlights key studies in regards to gender and online tools in order to have an overview of the association, if any, between gender and online tools. The overview of development/using of these tools, barriers and challenges in the GCC, particularly Oman are discussed.



## **3.2 The Problem of ‘Web 2.0’**

### **3.2.1 The label ‘Web 2.0’**

The emergence of various online tools and new web services, applications, and tools has presented great opportunities for organisations as well as individuals. The term “Web 2.0 was first coined in 2004 by Dale Dougherty, vice-president at O’Reilly Media, Inc. (the company that organises technology-related conferences and publishes computing books), during a team discussion on a potential future conference about the Web” (O’Reilly as cited in Anderson, 2007, p. 5). Thus ‘Web 2.0’ has become an umbrella term for advanced internet technology such as Facebook and blogs.

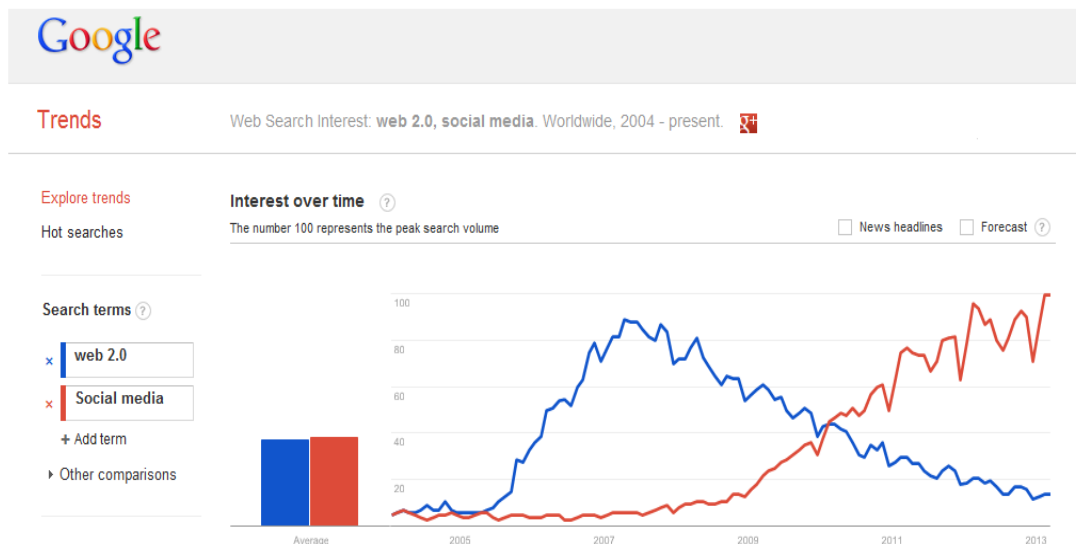
Researchers in a range of fields use ‘Web 2.0’ in different ways. The use of such a broad term in this research has the potential to result in its intended meaning being unclear to some users (including my survey respondents and interviewees). Using the term ‘Web 2.0’ in research may have two effects: 1) inaccurate information due to the fact that ‘Web 2.0’ means different things for different people, and 2) the absence of specific data. Both problems can be avoided by using specific tool and platform names which are likely to be clearer to the internet users. Focusing on what internet users do online by scrutinising their use of particular applications can thus produce more reliable results.

Since the emergence of the term in the GCC, there is no indication that ‘Web 2.0’ has ever been as popular a term as other platform specific titles such as Facebook or Twitter, or the more generic term social media. Facebook and Twitter have become popular expressions in use and are ranked as being the most popular sites among GCC people, as mentioned in Chapter 2. Furthermore, all of these terms increased in popularity and use among individuals in the middle of 2011 at the time of the ‘Arab Spring.’ The use of ‘Web 2.0’ as a concept has declined in recent years, especially in comparison with the growth of interest around comparable labels such as ‘social media.’ However, it is nevertheless important to clearly situate and investigate the term ‘Web 2.0’ and why it is so ambiguous today, given the historical importance of the term in describing a new era and focus for how the world wide web is understood, and the continued use of ‘Web 2.0’ in education contexts. Investigating various

understandings of ‘Web 2.0’ will help situate its broad and overlapping areas of meaning and providing clearer context before investigating the different ways academics and students may use and understand the term. Moreover, while social media is more popular a term today, it is notable that social media as an idea evolved from the context of ‘Web 2.0’ and thus the terms remain linked. Outlining the radically ambiguous nature of ‘Web 2.0’ will also explicate the decision in this research to often focus on specific tools, such as Twitter or Facebook, to avoid some of this ambiguity.

Before proceeding to examine the problem of the use of the term ‘Web 2.0,’ it is useful to broadly situate the use term over the last few years. Google Trends allows a rudimentary map to be produced showing how popular search term (Web 2.0) has been over time on Google. The peak search volume of this term was between the years 2007 and 2008, and then it started to decrease in 2009 (Figure 3.1), while terms such as social media have increased significantly comparatively at least until the end of 2013.

Figure 3.1 Google Trends of Web Search Interest: Web 2.0 and Social Media, Worldwide, 2004–Present.



At the beginning of the emergence of ‘Web 2.0’, O’Reilly (2007) has argued that ‘Web 2.0’ is a platform for user-generated content that refers to self-expression and personal publishing and web-based communities. In 2006, O’Reilly extended his definition of ‘Web 2.0’ to make clear that it implies a business revolution occurring

in the computer industry based on the capacity of business to harness and profit from network effects (Al-Fadhli, 2008).

While ambiguous and used in multiple ways, it is nevertheless important to provide a broad overview of this concept before going into more detail. ‘Web 2.0’ is defined as web-based communications that are facilitating communities and web services, such as SNSs and weblogs. It refers to a web of collaboration, participation, and information sharing (Huang & Behara, 2007). ‘Web 2.0’ is referred to as the second generation of internet-based services (Lytras et al., as cited in Levy & Hadar, 2010), and it “allows individuals to publish, collaborate and share experiences with other like-minded individuals or groups” (Shaohua & Peilin, 2008, p. 1121). In this view, ‘Web 2.0’ is related to social networking and web content sharing platform. Allen (2009) summarised the concept of ‘Web 2.0’ using the following four descriptions: website design and operation based on technologies that facilitate data sharing and web interactively; “new economic approaches to information exchange” (p. 4); new media communication (creation and production of content, users mainly in the role of producer); and state of mind. It is observable that many of these thoughts and descriptions focus on different areas—for example, the technical or social, or a combination of these different aspects. To better understand how this term is ambiguous and difficult to define, the current research highlights and reviews some of the important studies to provide evidence of various understandings of ‘Web 2.0’.

Firstly, ‘Web 2.0’ is described as the interactive two-way communication and collaboration by a number of scholars and researchers. They describe the term according to users’ activities with ‘Web 2.0.’ For example, Riegner (2007) conducted a study to explore the impact of ‘Web 2.0’ on consumer purchasing decisions. The study concluded that ‘Web 2.0’ provides a digital communication channel for consumers to facilitate communication. Lai and Turban (2008) described ‘Web 2.0’ as a unique communication and collaborative environment. This suggests that ‘Web 2.0’ is a web of communication. Kamel Boulos and Wheeler (2007) described ‘Web 2.0’ as a collaborative tool that opens up new possibilities for collaborative-networked learning. The definitions noted above outline key differences between ‘Web 1.0’ and ‘Web 2.0’; some authors and researchers see Web 1.0 as providing only one-way communication of information rather than multi-

directional communication. 'Web 2.0,' on the other hand, is designed for two-way communication where participants can interact, communicate, and collaborate with others. There are many other studies that refer to this term as being related to communication and collaboration (e.g., Tredinnick, 2006; Creese, 2007; Mangold & Faulds, 2009; Crook et al., 2008; Bughin et al., 2009; Harrison & Barthel, 2009; Andriole, 2010).

Secondly, 'Web 2.0' is characterised by participation and contribution and using the web as a platform for generating and consuming content. This includes the user's ability to participate by contributing content. User-generated content (UGC) is a core feature of 'Web 2.0' applications as is indicated by O'Reilly (2007), Franklin and van Harmelen (2007), and others. Riegner (2007) and Wirtz, Schilke and Ullrich (2010) labeled 'Web 2.0' as UGC, user-generated creativity, and user-generated innovations. This is supported by Parise and Guinan (2008), Constantinides and Fountain (2008), and Andriole (2010) when they referred to 'Web 2.0' as the user's ability to create and update content and the ability to share information and knowledge. Kamel Boulos and Wheeler (2007) described 'Web 2.0' as the 'architecture of participation'. They claimed that 'Web 2.0' allows "anyone to create, assemble, organise (tag), locate and share content to meet their own needs or the needs of clients, courtesy of the emergence of new flexible content licensing models like creative Commons" (p. 3). This notion is also provided by Andersen (2007) when he indicated that 'architecture of participation' is one of the ideas behind 'Web 2.0,' which refers to collaboration and UGC, and stated that "the way a service is actually designed can improve and facilitate mass user participation" (p. 19). According to these definitions, 'Web 2.0' is about creation of content by users, and it changes the way they produce, distribute, and re-use information. As such, the definitions noted above outline key differences between Web 1.0 and 'Web 2.0.' Many researchers refer to the early web as the "read only web" in which an internet user's role was limited to reading and searching for information. UGC is a key characteristic of the so-called 'Web 2.0,' and 'architecture of participation' is a 'Web 2.0' concept in which users can contribute to the design and development process.

Thirdly, 'Web 2.0' is described as a group of web-based technologies, a collection of open-source software, or a new generation of web-based technologies, tools, and

services. For example, it is described in business as a collection of technologies that facilitates flexible web design, creative reuse, and collaborative content creation and modification and establishes social networks (Murugesan, 2007). Constantinides and Fountain (2008) referred to this term as a collection of open-source, interactive, and user-controlled online applications. Moreover, Creese (2007) stated that 'Web 2.0' refers to certain web technologies and new ways of personalising, contributing, networking, and interacting. These technologies and online collaborative tools include many applications such as Facebook, wikis, blogs and Twitter. All these definitions suggest that 'Web 2.0' refers to a group of technological developments that include a variety of websites and applications such as social networking and content hosting services. 'Web 2.0' is an extension of the WWW, and it did not replace the early web.

Fourthly, 'Web 2.0' is a term used to describe social networking, social software, and what is now termed social media (Harrison & Barthel, 2009; Lai & Turban, 2008; Mangold & Faulds, 2009). It is a move toward a more social world, and it is a web of social applications or social participation, enabling more interactive information sharing. Social network is an extremely popular term and is used to describe 'Web 2.0' by a number of researchers (e.g., Constantinides & Fountain, 2008; Wirtz et al., 2010). Bughin and Manyika (2007) referred to 'Web 2.0' web service as peer-to-peer networking. Moreover, Harrison and Barthel (2009) reported that people are moving away from using conventional software to using social software with which they can self-organise without imposing structure or organisation.

Based on these various views and descriptions, a more complete definition of 'Web 2.0' refers to a group of web-based technologies that allows users to undertake social interaction, content creation and information sharing, and collaboration. However, some authors argue that 'Web 2.0' differs from social media because social media builds on the ideological and technological foundations of 'Web 2.0' (e.g., Kaplan & Haenlein, 2010), whereas Fuchs et al. (2010) found that 'Web 2.0' and social software are terms that, in most cases, are used interchangeably. Blinn, Lindermann, Fäcks and Nüttgens (2009, p. 3) claimed, "Social software is not a synonym to Web 2.0 but a subsection of Web 2.0". Others classified social software under Web 2.0 as a major component of it (Bartlett-Bragg, 2006; boyd & Ellison, 2007). According to

Mangold and Faulds (2009), social media encompasses a wide range of online tools, such as blogs, discussion boards, chat rooms, consumer-to-consumer e-mail, consumer product or service ratings websites and forums, internet discussion boards and forums, SNSs, video sharing sites (YouTube) and photo sharing sites (Flickr). It seems that there is an ambiguity in the definitions of similar terms, such as social media and social software which is used interchangeably with 'Web 2.0.' This further indicates that there is a lack of clear definition of the term and ambiguity around its exact meaning, nature, and scope.

Moreover, "many internet users have engaged with so-called 'Web 2.0' applications without realizing they might be part of this new version of the web, while others have continued to use the internet as if this new version had never appeared" (Allen, 2012, p. 4). According to this view, it can be noted that even some users who use these applications do not know what the label 2.0 refers to; some of them use Moodle and other traditional LMSs, and they classify these as 'Web 2.0' applications. Others reflect that these are completely different from 'Web 2.0.' Besides, some users interact with various sites, and they believe that this is something related to 'Web 3.0' or semantic web, while others confuse Web 1.0 with 'Web 2.0,' which leads to failure in categorising and shaping these tools in a useful way (Garoufallou & Charitopoulou, 2011). These definitions and views of the label 2.0 either came from or were developed from the early web and sometimes according to understandings of the internet. On the other hand, some individuals developed their understanding of this term according to their own activities on the web.

The reasons for the ambiguity of the term have been attributed to a range of factors. For example, the term was originally coined by practitioners (e.g., marketing researchers) during a brainstorming session of an industry conference to describe new business models (O'Reilly, 2007; Chong & Xie, 2011). It has been mentioned that "the newness but most importantly the complexity of the issue: in the Web 2.0 domain various technical and business aspects are heavily interrelated, often making the identification of the underlying value models difficult" (Constantinides & Fountain, 2008, p. 234). It also has been mentioned that "One possible reason for this 'fuzzy' or unclear definition of 'Web 2.0' could be that the phrases provided for definition of 'Web 2.0' are too close in terminology for one to differentiate between

them” (Davis, 2009, p. 59). Other important reasons for the confusion are the ways people in various fields shape and adopt this term to achieve their purposes, and their understanding of the term and the fact that political and cultural traditions, beliefs, or values differ from one society to another.

### ***3.2.2 The Idea of Web Categorisation and Cultural Practices***

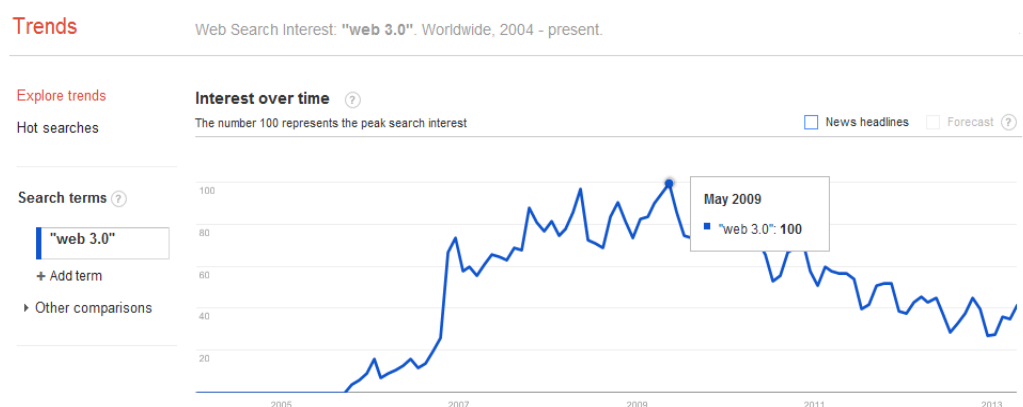
Tim Berners-Lee invented the web in 1989 (Berners-Lee, 2001). The web (World Wide Web) has gone through multiple generations or versions: Web 1.0 was the first generation of the web, which, at that time, was seen by many academic and non-academic users as the turning point for the internet. Web 1.0 is a retronym, “it commonly means any website design style used before the advent of the Web 2.0 phenomenon” (Pradhan & Panighahi, 2010, p. 450). The lack of an agreed definition of web also includes web categorisation, authors in many disciplines claim that the current version is ‘Web 2.0’ and that it still has some of the characteristics of Web 1.0, while other researchers and scholars have been writing/talking about Web 3.0, 4.0 and even 5.0. There are also combinations of the characteristics of various generations of the web because ‘Web 2.0’ was ambiguous and unclear. The main aim of this section is not to outline a history of ‘Web 2.0’, but rather to explore broad understandings of ‘Web 2.0’ in use today, and how academics and students have developed their different understandings of the web.

Before going into the discussion of various web generations, a survey of some studies highlighting the descriptions of so-called ‘Web 3.0’ will be helpful. Web 3.0 is also known as the ‘semantic web’. The idea of semantic Web was first coined in 1990 by Tim Berners-Lee (Berners-Lee, 2001). A number of scholars and authors have offered definitions for Web 3.0. For example, “Web 3.0 is an extension of the current WWW, where data are organised in a well-defined manner, offering information regarding their content, allowing cooperation between computers and people” (Berners-Lee, as cited in Kasimati & Zamani, 2011, p. 338). Most definitions of Web 3.0 in the literature refer to Web 3.0 as the ‘Semantic Web’. Examples of these studies include Ohler (2008); and Sonntag, Deru & Bergweiler (2009). An important definition of Web 3.0 is provided by Spivacks (as cited in Cheung, Yip, Townsend & Scotch, 2008) when he described Web 3.0 as a third

generation of the web. According to this definition, Web 3.0 is Semantic Web, natural language search, data-mining, machine learning, and artificial intelligence technologies “that emphasize machine-facilitated understanding of information in order to provide a more productive and intuitive user experience” (p. 8). A description of Web 3.0 given by Smith, Welty and McGuinness (2004) views the web as ontologies accessed through URLs; in these ontologies, tags use words, and interactions between data are held in different formats. It is combining evolving data into artificial intelligence in which data can then be utilised in better ways. This is supported by Morris (2011) when he stated that “Semantic Web is data integration, by using metadata, “display only” data is converted to meaningful information which can be located, evaluated, and delivered by software agents” (p. 42).

Detailed examination of differences between syntax (Web 2.0) and semantics (Web 3.0) are provided by Seager (2011) who concluded by describing Web 3.0 as semantics, subjective, synthesising, look at the whole and intuitive, in comparison with ‘Web 2.0’ which is syntax, objective, analytical, looking at parts and rational (see Seager, 2011). Other studies discuss the difference between Web 2.0 and semantic web (e.g., Floridi, 2009). It is also important to mention here the status of the term ‘Web 3.0’ over the last few years. According to Google Trends, the peak search volume of this term was in May 2009, and then started to decrease again (Figure 3.2).

Figure 3.2 Google Trends of Web Search Interest: Web 3.0. Worldwide, 2004 - present



A number of concepts integral to an understanding of these generations/versions are discussed by number of researchers. To start with the most important description,



Fuchs et al. (2010) provided a theoretical understanding of ‘Web 2.0’ and social software by outlining a model of the web as a techno-social system. They introduce Web 1.0 as a web of cognition, ‘Web 2.0’ as a web of human communication, and Web 3.0 as a web of co-operation. They give their reasons for assigning these descriptions to three generations of the web as follows: “all communication processes require cognition, but not all cognition processes result in communication, and that all co-operation processes require communication and cognition, but not all cognition and communication processes result in co-operation” (p. 43). They also added that:

the World Wide Web, as the Internet at all, by virtue of its technical qualities, has the potential for transforming societies into networked communities so that it can advance from the cognitive and communicative levels of information generation towards the cooperative level. (p. 56)

In this context, Web technologies can enable different communication processes through the availability of various online tools; however internet users can play an important role in shaping these tools and applications within these communications processes (cognition, participation, and cooperation). Moreover, Fuchs et al. (as cited in Barassi, & Treré, 2012) argued that “different Web platforms do not replace one another. Rather, the Web needs to be understood as an integrated socio-technical system, in which different Web applications and stages coexist” (p. 7).

Descriptions of these generations in detail are supplied by Kambil (2008), who describes the four generations or versions as follows: Web 1.0 is a basic publishing and transaction medium; ‘Web 2.0’ is a social and co-created web (e.g., YouTube, Facebook, LinkedIn, Delicious, and Wikipedia); Web 3.0 is a semantic and intelligent web in which human and machine intelligence are combined to make information more rich, relevant, timely and accessible; Web 4.0 is a mobile, machine and object web in which real-time integration between individuals and the cybernetic worlds and objects with which they interact is increased. Aghaei, Nematbakhsh and Farsani (2012) note that Web 1.0 enables searching and reading information without the ability to add or create content; ‘Web 2.0’ is a participative web, with more read-write capabilities and more interaction, with less control; Web 3.0 is about semantic

technologies and a social computing environment; Web 4.0 is a symbiotic web in which the human mind and the infrastructure of the internet could interact in symbiosis. Pan et al. (2009) described these generations as follows: Web 1.0 was 'read-only', Web 2.0 is 'read-write', and Web 3.0 will be 'read-write-execute'. They added that Web 3.0 is based on network computing, distributed databases and intelligent applications. Other studies discuss the definitions of these generations in details are provided by Naik & Shivalingaiah (2008) and Manzalini & Stavdas (2008).

The existence and development of these generations/versions are also still far from clear. There is a lack of consensus around the clear view of these generations. Evans (2007) argued that the idea that the web has constantly evolved from Web 1.0, Web 2.0 and up, that Web 3.0 will never work, that Web 4.0 is here now but people do not know about it and that Web Science is charged with finding out what it is and how it works. This view suggests that the label 3.0 is not universally valid and that these inconsistencies are leading people away from web era categorisation. However, Silva, Mahfujur Rahman and El Saddik (2008) claim that the latest web generation is Web 3.0. They add that this term is still somehow ambiguous, and there is no agreement on a specific definition by IT experts, while Morris (2011) points out that "Web 3.0 and its implications for online learning are still evolving and a clear vision of "E-learning 3.0" is still in the future" (p. 42). Hendler (2009) reports that Web 3.0 extends beyond current Web 2.0 applications by using semantic web technologies, and graph-based, open data. These views indicate that the transition to Web 3.0 remains ambiguous, and predict a future in which different beliefs and attitudes towards these generations remain. Others claim that 'Web 2.0' is itself the Semantic Web. For example, "O'Reilly, the principal originator of the term *Web 2.0*, defended it against early attempts to move towards Web 3.0 by claiming that Web 2.0 was itself the Semantic Web" (Markoff ; O'Reilly as cited in Allen, 2012, p. 4).

It is also the case that 'Web 2.0' is more of an attitude rather than a technology (Davis, 2005). In other words, it is Social Web technologies. Different attitudes towards the label 'Web 2.0' can indicate how people act and practise on the web. In other words, the understanding of the Web as an integrated socio-technical system (as mentioned in Fuchs, et al research) can help to understand how people shape and

utilise various online tools for different purposes. Berners-Lee (2001) argues that the web is a personal and DIY (Do-It-Yourself) medium of communication. Jenkins (2010) added that different communities have different meanings and attitudes toward the web, and thus participate on the web according to kinds of ‘cultural practices and identities’. More clearly, he distinguishes between his idea about ‘participatory cultures’ and ‘Web 2.0’ by clarifying that ‘Web 2.0’ “refers specifically to a set of commercial practices that seek to capture and harness the creative energies and collective intelligences of their users”. He added that “Web 2.0” is not a theory of pedagogy; it’s a business model”.

Overall, the idea of web categorisation may not be all that useful. It might distract people from the optimal use of the web, by creating artificial eras of development and implementation. A more useful focus is to address not so much the categorisation of web, but more specifically focus on what people actually do online. The central feature, then, defining each web generation has less to do with the generations’ characteristics and more to do with the internet users; the defining differences between generations of the web lie in the ways users have used and shaped the content. People have different attitudes towards these tools and applications, and this could reflect different uses and architectures of online tools. These attitudes might be influenced by norms and values of community of participants or/and cultural practices. In other words, using online tools such as Wikipedia reflects a particular understanding of the internet and the term ‘Web 2.0’ among users.

Given the diversity of meanings, and the importance of understanding how others see ‘Web 2.0’ as they use it, the research will also involve analysing the particular way that academics and students in Oman understand ‘Web 2.0’. The term ‘online tools’ will be used in this study to encompass ‘Web 2.0’ phenomenon and other phenomena such as social media and social software due to the ambiguity around the ‘Web 2.0’ phenomenon, and the lack of an agreed definition of ‘Web 2.0’ as has been discussed in this chapter. Therefore, the term ‘online tools’ is more appropriate to use in this study. Nevertheless, the use of ‘Web 2.0’ will remain in the next sections, and sometime will be used interchangeably with the term “online tools” because of the

widespread use of the term ‘Web 2.0’ in most of the studies as well as these tools such as Facebook and Twitter commonly grouped together under the term ‘Web 2.0’.

### **3.3 Online Tools as Open Platform for Graduates versus LMS**

Online tools can be harnessed in e-learning technologies or LMSs in teaching institutions. The web can be described as a potential Personal Learning Environment (PLE) where everyone can learn and share knowledge using their choice of online tools. It is critical in discussions of traditional LMSs to differentiate them and examine their integration into online tools such as wikis and blogs. The following is a survey of some studies highlighting the issue of LMSs and online tools in education.

LMSs provide some of the tools for interactivity for students, and previous research indicates that using LMSs has brought numerous benefits to teaching and learning. LMSs are simple, consistent and structured (Mott, 2010). LMSs are online platforms for education that will “facilitate change from passive to active learning” (Herse & Lee, 2005, p. 51); promote interactions between students and academics (West, Waddoups & Graham, 2007; Lonn & Teasley, 2009); offer asynchronous communication formats like email and discussion forums (Ebner, 2007); support collaborative learning (McGill & Klobas, 2009), and permit “faculty to incorporate multimedia elements including audio recordings, music, video, text, interactivity and sequencing” (Klemm; Smith as cited in Gautreau, 2011, p. 4).

However, there are several problems encountered in using LMSs in education. They have relatively inflexible systems due to the license restrictions of commercial LMSs (Sclater, 2008; Sanchez-Franco, 2010), and their features “may overtly or subtly align the institutional processes with the software rather than having the systems serve the requirements of the institution” (Sclater, 2008, p. 3). The facilities in LMSs are generally limited (Sclater, 2008), and so far their use has had only a limited impact on pedagogy (Dalsgaard, 2006). LMSs have been poorly utilised in most institutions with respect to their communication features, and “LMS integration into teacher practices is minimal and teachers’ creative space can be limited for discipline-based innovation” (Steel & Levy, 2009, p. 1013). Moreover, Mott (2010)

points out several weaknesses of LMSs as follows: courses disappear at the end of the semester, negating the potential of the network effect; there are limited opportunities for students to own and manage their learning experiences within and across courses; there are rigid, non-modular tools and interoperability challenges and difficulties. Leaver (2003) indicated, through his analysis of some of the specific features of WebCT, that “the course construction tools are inwardly and exclusively WebCT-oriented and do not teach outward facing generic skills”. Dalsgaard (2006) reports, “using personal tools and social networks represents a different approach to the organization of e-learning than the utilization of an LMS. Using an LMS, an e-learning course is delivered through and takes place within an integrated system”. According to these views, the LMS has specific limits for students, who cannot use it after course completion. It does not give them further opportunities and options to manage their learning experiences within and across courses, nor to undertake further learning activities due to the limitations of traditional LMSs. These limitations impair information and knowledge sharing, as well as gaining different skills across courses.

On the other hand, online tools or ‘Web 2.0 tools’ have proven themselves an effective tool in education. The vital nature of online tools can be observed through three key points. Firstly, these online tools are beginning to impact learner expectations. Students expect universities to shift from traditional methods or traditional LMSs to various online tools (through an e-learning platform). An open platform is one of the vital characteristics of these tools, which seeks to create an online learning environment for exchanging knowledge and experience between the learner and educator as well as between educators themselves. Online tools are playing an important role as PLE offer many features not offered by LMSs. PLEs “consist, in effect, of a set of related concepts, each associated with the technologies and applications of Web 2.0, and each describing a shift in emphasis away from that which would characterize learning using the traditional LMS” (Downes, 2007, p. 4). Mott (2010) claims that individuals can benefit from PLE in the following ways:

- Almost limitless variety and functionality of tools, customizable and adaptable in multiple configurations and variations; inexpensive – often composed of free and open source tools

- No artificial time boundaries
- Open to interaction, sharing, and connection without regard to official registration in programs or courses or particular institutions;
- Student-centric (each student selects and uses the tools that make sense for their particular needs and circumstances);
- Learning content and conversations are completable via simple technologies like RSS. (p. 5)

These characteristics can be found in online tools, and academics and students may find that these characteristics meet their needs in teaching and learning better than an LMS. Clark (as cited in Hodges and Repman, 2011) suggested two categories of criteria to consider when adopting a Web 2.0 tool in education, which are: ease of use including accessibility and security; and features offered by the tool and the nature of support resources available for the tool. Another important point is that the adaptation of LMS services to mobile devices took longer than social networks, and online tools such as Facebook and Twitter have already been long used via smartphone. It is important to mention that they are attempts/initiatives that describe a way to integrate mobile devices and educational applications with a LMS such as Moodle through web services (e.g., Forment & Guerrero, 2008; Casany, et al., 2012). LMSs mobile learning applications are now available on a variety of devices including Android, BlackBerry, and smartphones such as iPhone. However, online tools such as Facebook, Twitter and LinkedIn can be downloaded, installed and used easily through smartphones. Technology devices like smartphones (e.g., Galaxy and iPhone) and tablet devices (e.g., iPad and Galaxy Tab) easily access such applications or online tools, and facilitate students' participation and discussions on platforms that will be available to them after graduation.

Secondly, instructors have begun to recognise the importance of these tools in teaching while many students now tend to use these tools for different purposes, and they now are moving to use them in their daily lives. Academics need to reach their students, and this could encourage some to use them. LMSs will however be insufficient for the all the needs of students and academics (Downes, 2007). Therefore, many students and academics tend to use online tools/Web 2.0 for their personal and learning purposes:

Many students, teachers, instructional technologists, and administrators consider the LMS too inflexible and are turning to the web for tools that support their everyday communication, productivity, and collaboration needs. Blogs, wikis, social networking sites, microblogging tools, and other web-based applications are supplanting the teaching and learning tools previously found only inside the LMS. (Mott, 2010, p. 1)

Another point is that these tools are many and varied. Academics can easily utilise their choice of popular technologies to assist in their teaching according to their needs. These technologies and online tools, such as LinkedIn, allow students and academics to continue using them at future workplaces, and continue to provide students and academics with references, comments from others and feedback within their field, whether at university/college or at work.

Thirdly, the effect of online tools on LMSs, which drives many designers, adopters and administrators to consider using these tools with LMSs in order to meet students' and academics' needs. Various characteristics of online tools can be used (like an open platform) and integrated into an LMS so that the LMS can meet learner and educator needs, as compared to the traditional, more limited LMS. Designers and scholars recognise the importance of these characteristics of online tools in education. Therefore, a combination of online tools and LMSs has been employed in e-learning environments as an initiative by many institutions. These initiatives are continually adding new features and monitoring the use of online tools. "Increasingly, open source (e.g., Moodle) and commercial (e.g., WebCT/Blackboard) course management systems (CMSs) now include integrated wiki and blog spaces, making them more readily available to practitioners already using such systems" (Sykes, Oskoz & Thorne, 2008, p. 531). Meccawy, Blanchfield, Ashman, Brailsford and Moore (2008) provide the following as an example of using LMS within these online tools:

Modern Learning Management Systems (LMS) provide the tools and the environment to enable this social learning'. WHURLE 2.0 (see Meccawy, 2007) was proposed as an adaptive LMS framework that allows adaptation functionality to be integrated with a modern LMS, by transforming its overall

architecture into a distributed web service...The Moodle LMS becomes the delivery platform for the adaptation effect in addition to providing its tried and trusted tools for social learning. (p. 274)

Online tools characteristically offer many options for educators in teaching and for students in learning, and therefore, the adoption and integration of these features within LMS might increase the popularity of LMSs. According to Soumplis, Koulocheri, Kostaras, Karousos & Xenos (2011),

...almost 75% of the LMSs have more than half of the Web 2.0 features under evaluation present which is clear indication about the effect of Web 2.0 on the LMSs as well as the adaptivity of the software market to the users' needs, as users of those systems, having any role, are accustomed to expecting and using feature rich applications exploiting the full potential of native Web 2.0 applications. (p. 207)

The web technologies that are incorporated with LMSs include wikis, blogs, RSS, forums, glossaries, files sharing and audio-visual sharing. Many educators adopt and shape blogs, wikis, YouTube and tagging in the education sector. However, the integration of these applications (e.g., blogs, wikis, etc.) into LMSs is often an incomplete version of external tools. The LMSs are closed systems, only accessible by university staff and students. Most online tools on the other hand are cross-platform, which allows students to access and use them after course completion and access is not limited to university staff and students. Online tools focus more on innovation, creation, communication and collaboration. Moreover, the academic community has a chance to use all characteristics and functionality of these external tools; however, the incorporation of these characteristics within LMSs will not offer the same opportunity (limited opportunities for learning and teaching). "The incorporation of Web 2.0 features within those LMSs differentiates them regarding their ability and their potential to be used as PLE" (Soumplis et al., 2011, p. 197). However, there are also several problems encountered in using online tools such Facebook in education (e.g., privacy concerns). These issues and problems are discussed further in depth in sections 3.6. Therefore, the combination of online tools and LMSs could improve e-learning.



### **3.4 Online Tools in Three Contexts**

#### ***3.4.1 Online Tools for Personal Purposes***

Various online tools have become increasingly embedded in the daily routines of people's lives, particularly SNSs or social media. SNSs have facilitated people's communication and collaboration and academic communities have found these online tools useful in performing many tasks related to their lives.

A number of research studies have found that online tools, including Facebook, YouTube and Twitter have been widely used for personal purposes (e.g., online shopping, passing time, communication, entertainment, etc.). For example, a study by Madge, Meek, Wellens and Hooley (2009) was conducted with first-year undergraduates at a British university using an online survey. The results of the study show that the majority of the surveyed students (n = 213) used Facebook for social reasons. However, only 10% of them used it for discussing academic work, and less than 1% used it for contact with academic staff. Over 95% of British undergraduate students are regularly using SNSs (Mori, 2007), but according to a study by Garoufallou and Charitopoulou (2011), "most of the students do not believe that SNSs can assist them in their studies; they think that the networks' main function is to entertain them" (p. 495). This is supported by Popescu (2010) who found that the most common uses of online tools such as blogs, wikis and SNSs among students at Romanian university are personal, including entertainment and keeping in touch with friends, and some students also relied on these applications for finding information (e.g., Wikipedia). This suggests that many students believe that these applications are not designed for education; rather they are a forum for social life and entertainment.

The personal internet activities on the SNSs include: facilitate social exploration and enable users to develop social networking skills; shared connections (boyd & Ellison, 2007); for communication and making social contacts (Shafique, Anwar & Bushra, 2010). Other personal internet activities include publishing and storing of textual information, by individuals (blogs) and collectively (wikis), of audio recordings (podcasts), and of video material and pictures (Ullrich et al., 2008). Online video-sharing services, particularly YouTube, have grown to become the most popular site for many users. Internet users can access and search on YouTube, create an account,

save videos, post comments and download and upload videos. “A report from Pew Internet & American Life states that 69% of U.S. internet users watch or download video online and 14% have posted videos” (Purcell as cited in Snelson, 2011, p. 159). Other applications such as social bookmarking use a social organisation of collective knowledge, giving users the ability to categorise and annotate information, and using blogs for self-expression and enhanced readership (Sykes et al., 2008). Considerable previous research has reported that people use online tools/Web 2.0 as communication tools for many purposes (Miller, 2005; Maness, 2006). They also use online tools for information searches, entertainment and reading news (Levy & Hadar, 2010). Virkus and Bamigbola (2011) found in one study that online tools/Web 2.0 are used for many purposes ranging from personal communication, to entertainment, health, religious, political and economic purposes.

Overall, online tools seem to be a platform for users to communicate and interact with one another in ways that were not possible in Web 1.0, which was primarily one-directional, as noted in section 3.2.2. Communicating through various online tools, digital and social media has become more effective, and this has encouraged internet users to use these innovations in personal communications, rather than using more traditional tools.

### ***3.4.2 Online Tools for Teaching and Learning***

#### **3.4.2.1 Academic Community Knowledge of Online Tools**

Many studies report overall high level awareness of a range of online tools, but less actual use for teaching and learning. There is also a difference between students and academics regarding levels of using and adopting these online tools, and even between academics themselves. For example, Roblyer, McDaniel, Webb, Herman and Witty (2010) found that faculty and students differ somewhat in their current and anticipated uses of SNSs such as Facebook. They added, “Students seem much more open to the idea of using Facebook instructionally than do faculty” (p. 138). This section aims to identify the current awareness of the academic community including both students and academics towards various online tools. Describing academic community awareness/knowledge of online tools will help in drawing a clear picture of the adoption of online tools.

A study by Ajjan and Hartshorne (2008) attempted to assess the faculty's awareness of the benefits of 'Web 2.0' regarding using various online tools to supplement in-class learning. The 136 participants consisted of instructional personnel at a large university in the southeastern United States and include clinical, visiting, assistant, associate, and full professors at the university. The results indicate that some faculty members feel that some online tools or Web 2.0 tools could improve students' learning and their interaction with instructors and peers, although few of the faculty chose to use them in the classroom. It appears that academics believe that these tools and applications could improve students' learning, but those beliefs were not accompanied by the practise of using those tools. Tyagi (2012) conducted a study among Professors, Associate Professors and Assistant Professors of different streams and departments in six Indian Universities regarding adoption of online tools/Web 2.0 in higher education. The study found that social bookmarking (72.09%) is the most frequently used online tool, followed by wikis (67.44%) and blogs (39.53%). RSS Feed was also popular among respondents. A small percentage of respondents use podcasting, SNSs and Mashup. Another study by Hashemi and Najafi (2011) investigated the use of blogs in the classroom by Iranian teachers and found that blogs are not recognised educational technologies among either Iranian students or faculty members, and are particularly frowned upon by those who are majoring in English. Only 10% of the respondents knew a little about blogs. As researchers indicated, this is due to insufficient computer literacy, which affects the willingness of Iranian teachers to use modern computer-based approaches in their classes. The adoption and use of these tools are not globally equivalent, and vary even for specific applications. Social bookmarking was recorded as highly used in some studies among faculty (e.g., Tyagi, 2012) but recorded as less so in other studies (e.g., Majhi & Maharana, 2011; Kennedy et al., 2007).

As such, some university students are relatively less aware of, or familiar with, these online tools, but heavy use of the internet for emailing and searching. Emailing and searching are recorded the most popular online activities (Purcell, 2011). A study by Kennedy et al., (2007) conducted among 2000 first year students regarding use of emerging technologies for personal uses and in formal education at the University of Melbourne. The main findings of that study are as follow:

Established applications of technologies, such as searching for information on the web, email, mobile telephony and SMS messaging are used very frequently by a large majority of students. However, newer technologies, such as Blogs and Wikis that allow students to collaborate and to produce and publish material online are used by a relatively small proportion of students. While there was evidence that social networking and digital file sharing was popular among a small minority of students, few students were regularly using social bookmarking or creating and publishing podcasts. (p. 522)

Another study by Levy and Hadar (2010) investigated MBA students' perceptions and attitudes regarding Web 2.0 concepts. According to that study, MBA students are either partially familiar with or not familiar with the variety of 'Web 2.0' concepts and technologies, including Ning and blogs. However, other studies show that some academic communities are relatively aware of or familiar with these online tools. For example, Sandars and Schroter (2007) conducted a study among 3,000 medical students and 3,000 qualified medical practitioners to explore their familiarity with and use of online tools. The study found that all groups are familiar with Web 2.0 or online tools for personal and educational purposes but are less likely to use them than to be aware of them, particularly with respect to podcasts. The study also found that medical students use instant messaging, media sharing and social networking at a high rate. The same results were found by Sandars, Homer, Pell and Croker (2008) of survey of 212 students; they state that over 90% of undergraduate medical students used instant messaging, and SNSs were also highly used (70%).

In another major study by Popescu (2010), investigated students' attitudes towards the use of online tools/Web 2.0 such as blogs in a Romanian university, found students are relatively familiar with these tools and applications, and a large majority of them reported willingness and enthusiasm towards the wide-scale introduction of Web 2.0 applications in education. However, according to that study, most of the students are primarily consumers, not producers, of web content. The study indicated that only five students out of 30 kept blogs and only five had contributed to a wiki before the course. This result is consistent with Barnes and Lescault (2012) who found that the adoption of blogging started to decline in 2007 among the Inc. 500 companies (a monthly publication focused on growing companies in the US), the use

of blogging dropped to 37% in 2011. As such, results of the Pew Internet and American Life Project, which examines social media use among teens and young adults, indicates that teen blogging is on the decline, and nearly three quarters (73%) of online teens and a similar proportion (72%) of young adults use SNSs (Lenhart, Purcell, Smith & Zickuhr, 2010).

A recent study by Majhi and Maharana (2011) was conducted among 500 respondents including teachers, students and research scholars in two Indian universities in order to assess their awareness of Web 2.0 in learning. The study found that the majority of respondents are aware of Web 2.0 applications as tools for communication. Fewer than 14% of the respondents from both universities indicated that they knew the term Web 2.0, and that the use of 'Web 2.0 tools' is not very important at either university. According to that study, SNSs and wikis were the most-used applications in both university communities; blogs, RSS, social bookmarking and audio/video were less popular, although, these tools have a high potential educational value. Moreover, some studies show that students are highly aware of SNSs. A quick example is provided by Ellison et al. (2006) who conducted a study among 800 Michigan State University undergraduate students and found that 94% of them had an account on Facebook. A recent study by Roblyer et al. (2010), found that 95% of students had an account on Facebook, while about 73% of faculty had. Likewise, Wise, Skues and Williams (2011) conducted a study among first year psychology students in order to explore their use of Facebook; the majority of students (94%) had Facebook accounts, and usage was found to be mainly social.

It is apparent from previous research that the level of use or knowledge of these online tools varies from one society to another, and the level of use of these online tools differs from one application or tool to another. The prominent features of the internet are different for each society, depending on how people use and adopt these online tools, and for what purposes. However, it is notable that instant messaging, media sharing and SNSs were popular among internet users compared with social bookmarking and podcasts, while many students and faculty members had an account in one or more SNSs.

To conclude, SNSs represent the largest proportion of use for online tools, and academic communities appear to use SNSs for social enhancement more than they use other online tools. This conclusion is supported by the statistics as indicated in Chapter 2 and from previous studies noted above, but the case varies in different societies according to localised cultural and social practice. Given the general state of online tools knowledge, and the importance of understanding how aware of and familiar with online tools others are and the importance of understanding how communities use these tools, this research will also concern itself with analysing how aware academics and students in Oman are of various online tools.

#### 3.4.2.2 Communication and Collaborative Learning within Online Tools

Since the emergence of various online tools, higher education academics have begun to explore how to use these tools in their teaching. Many scholars and theorists have studied and discussed the use of various online tools in the education sector. One of the critical characteristics and benefits of these tools is that these online tools such as Facebook make online collaboration possible. Various online tools have surfaced as a means for communication and collaborative learning. “Collaborative learning involves students to learn as a team and it contributes to cognitive learning” (Klien, O’Neil & Baker, as cited in Chen, Hwang, Wang, 2012, p. 1095).

A recent dissertation by Malhiwsky (2010), which sought to discover the impact of online tools/Web 2.0 on the language learning of community college students, found that online tools enhance student learning and collaboration. Similar results were presented by Peterson (2009) and Li and Pitts (2009), indicating that these tools support collaborative e-learning and allow students to learn effectively. Another study by Ullrich et al. (2008) examined the use of ‘Web 2.0’ for learning and research and found that online tools allow for the publishing and storing of textual information with blogs and wikis and video uploading sites, such as YouTube. Chen (as cited in Union, 2011) conducted a study at Ohio State University’s Library (OSUL) and found that ‘Web 2.0’ was used to support students in learning. According to that study, “the outcomes showed that Web 2.0 increased workflow efficiency, reduced student training time, allowed staff to focus on other responsibilities, and ultimately allowed the OSUL students to do their work” (p. 29).

Within these studies, scholars focused more on particular online tools in teaching, such as blogs, and they have revealed how academics and teachers use these tools in education and for collaborative learning. For example, Ray and Hocutt (2006) conducted a study of 16 teachers who blog- and they found that blogs support reflective practice, collaboration and social interaction among educators. Similar results were found by Shihab (2009). Additionally, blogs are used as reflective learning tools and a new method of communication in higher education (see Farmer, Yue & Brooks, 2008; Wolf, 2010; Hovorka & Ress, 2009). SNSs are also online tools that bring advantages to educators and students (see Griffith & Liyanage, 2008; Munoz & Towner, 2009). For example, Bosch (2009) explores students' use of Facebook at the University of Cape Town. The study pointed out that students list a range of benefits from using Facebook, especially those who used Facebook for various academic purposes. According to that study, students reported the use of Facebook to identify and to find materials on the internet, and to answer questions about logistics, such as course venues and assignment details. All the students reported that Facebook allowed them "to access tutors and lecturers instantly, in an informal and less pressured online environment" (p. 195). Kosik (2007) found that students use Facebook to contact their peers for getting information about assignments. They reported that Facebook provides more immediate responses in comparison to university education software programmes. It is notable that students learn by collaborating with others, by expressing what they think, by helping and supporting each other, and by completing a task or an assignment together, and these online tools support this kind of collaborative learning.

Parker and Chao (2007) also discussed the use of wikis in education and identified many education-related applications for wikis, including promoting reading and the revision of writing assignments. Wikis are a good tool for discussion boards (see Peterson, 2009). Bratsas, Kapsas, Konstantinidis, Koutsouridis and Bamidis (2009) point out that: wikis enhance collaboration between teachers and students by allowing them to work closely together such as collecting information on a topic. It also allows cooperative learning through discussion and editing content. The study concluded that wikis is compatible for cooperative learning environments. Additionally, online tools support students in developing their listening and speaking skills and in information sharing by using YouTube (see Agazio & Buckley, 2010;

Alm, 2006). Rebecca (as cited in Mullen & Wedwick, 2008) found that YouTube is a useful tool that allows quick access to a large database of videos. Another study by Burke, Snyder and Rager (2009) examined the optional use of YouTube in the classroom as a teaching resource by faculty members. The study found that 42% of faculty members reported using YouTube in their class; the most common uses reported are for in-class discussion and debates, and providing information materials for the course. YouTube can enhance students' learning and understanding of their course through learning from videos uploaded by academics or by other students. "Web 2.0 applications enable educators to create personalized, active, participatory, and cooperative learning environments for the purpose of enhancing desired learning experiences" (McLoughlin & Lee as cited in Huang, Yoo & Choi, 2008, p. 3).

Therefore, as McLoughlin and Lee, and others point out, online tools can be used in various educational activities, improving teaching and learning experiences, and especially in collaborative activities. Shaping and utilising these tools in multipurpose and new ways to optimise them for teaching and learning will help in creating and implementing a productive learning environment for both students and instructors. The next table (Table 3.1) indicates the main educational activities cited in the literature and the applications that were used in these activities as reviewed by this researcher.

Table 3.1 Main Educational Activities by Using Various Online Tools

Main educational activities	Various Online tools	Sources
<ul style="list-style-type: none"> <li>• Collaborative learning and collaborative research, and communication</li> </ul>	Blogs, wikis, RSS feeds, social bookmarking (e.g., Delicious and citeulike social references (e.g., Wiki Answers and Askville), Social networking sites (e.g., Facebook, Twitter and MySpace)	Ray & Hocutt (2006); Shihab (2009); Wolf (2010); Hovorka & Ress (2009); Griffith & Liyanage (2008); Munoz & Towner (2009); Grosseck (2009); Ullrich et al. (2008); Majhi & Maharana (2011); Conole & Alevizou (2010); and Shih & Waugh (2011)
<ul style="list-style-type: none"> <li>• Information and knowledge sharing.</li> <li>• File and video sharing, photos and slide sharing and resources sharing</li> <li>• Online discussion</li> <li>• Media sharing and manipulating</li> </ul>	Wikis, blogs, podcasts. MySpace, social bookmarking (e.g., Delicious), Wikipedia, YouTube	Agazio & Buckley (2010); Alm (2006); Parker & Chao (2007); Peterson (2009); McLoughlin & Lee (2007); Grosseck (2009); Downes (2004); Crook et al., (2008); and Snelson (2011).
<ul style="list-style-type: none"> <li>• Feedback and update</li> </ul>	RSS feeds, blogs	Churchill (2009) & Ress (2009); Luo (2009)



### 3.4.2.3 Online Tools within a Curriculum and Teaching Practice

Various online tools have been found to be useful in enhancing courses. For example, wikis have been used for group work; and blogs have been used effectively for journals and independent studies, and forum discussions. A study by Lemley and Burnham (2009) investigated the use of SNSs in the curricula of medical and nursing schools, using online surveys. The study found that 53% of nursing schools and 45% of medical schools use 'Web 2.0' tools in their curricula; however, 55% of medical school respondents also use the tools personally. The study concluded that the most common online tools used in the curricula are blogs, wikis, videocasts and podcasts. There are differences in how academics adopt and use these online tools. In this section, the study surveys the literature describing academics' experiences in shaping such applications in particular units/course in order to enhance teaching and learning. Giving examples of how these online tools are applied will provide a clear map of the way academics shape these tools in teaching and learning in the courses in the context of changes in society with respect to the social and educational climates.

A study by Sendall, Geccucci and Peslak (2008) studied classroom implementation of Web 2.0 applications such as blogs at three north-eastern US universities. It was found that professors at these universities used blogs for student assignments, and students had the opportunity to tag articles on the proliferation of blogs and wikis. Sendall et al. (2008) concluded that Web 2.0 is useful for assignments. Churchill (2009) added that academics use blogs to help their students access course materials and post their reflections. The study also found that students were blogging because of assessment requirement, tasks set through the course required the use of blogs and facilitator was blogging as well. The study concluded that students were less willing to continue using this tool in their learning in the future on their own. Many teachers also create their own blogs and encourage students to post and participate in those venues (Shihab, 2009). By using these online tools, students can access homework and lectures and can watch documentaries about what they are learning.

Another study by Ioannou and Artino (2008) described how wikis can contribute to collaborative learning work by incorporated wikis in an introductory course on educational technology at a large public university. They indicated that wikis are

used as a collaborative writing tool (working within a group); as a knowledge database (by using a wiki for a technology discussion in class and other purposes); as a communication tool and for feedback/exchange of ideas (e.g., posting questions and getting answers, suggestions and comments), and for activity planning (e.g., producing a video clip). A recent important study of adoption of online tools as informal learning within the courses at universities is conducted by Leaver (2012) who adopted Twitter in a course called “Web Communications” which is a part of the Mass Communications degree for first-year students at Curtin University. The study explored the ways in which students use this tool for their learning. Three main uses were found: socialising, resource-sharing (e.g., highlighting links to current resources, news items, blog posts or other material relevant to the course) and posing questions for participants (students and instructors- tutors or the unit coordinator). The study concluded that Twitter can make a valuable contribution to student learning, especially for those who are studying online; however, Twitter should be deployed purposefully to achieve this goal.

Based on these studies, it appears that academics tend to use these online tools for teaching purposes but in different ways, according to their needs and nature of the course. There are many other studies describing the different ways in which these tools (e.g., blogs) can be used in education (see Dieu, 2004). Many projects and studies conducted in various universities have demonstrated the way ‘Web 2.0’ applications were used for teaching students (see Chandra & Chalmers, 2010; Gray et al., 2010; Partridge et al., 2010). Overall, most studies, including those presented in previous section, highlight three different levels of activities which were widely practiced within a curriculum via use of these online tools; (1) resources and information finding and sharing; (2) posting assignments for students; (3) using these tools as platforms for discussion.

On the other hand, many tools have shown a great potential for improving students’ learning, but failed to be utilised effectively enough to produce the result. For example, “SNSs may become yet another technology that had great potential for improving the higher education experience but failed to be adopted enough to have any real impact” (Roblyer et al., 2010, p. 138). This raises the question again regarding the utilising of these tools in teaching and learning. The tools cannot work

innovatively by themselves; it is the academics' ability, attitude and beliefs with respect to these tools in teaching that makes the difference. According to Allen and Long (2009), "Innovation rests not with the technology itself, but with the way that the internet – often imprecisely, inappropriately, or unpredictably – works as an engine for the transformation of how we "do" knowledge work in our everyday lives" (p. 4).

Overall, most students tend to use these tools for personal purposes, and to communicate and collaborate with their peers, rather than communicating and collaborating with academic staff. For example, Madge et al., (2009) state that the majority of undergraduate students who used Facebook had never communicated with an academic staff member using Facebook. Ophus and Abbitt (2009) reported the same results from a survey of 110 students at Midwestern University. Adopting suitable web applications within the curriculum will add value to the students' learning experiences, where they have already used them for other purposes. Therefore, academics must find ways to utilise these online tools to meet students' needs while "many of the students were born in the digital age and all technological resources used in different contexts (digital natives)" (Conde, García, Casany & Alier, 2010, p. 110).

### ***3.4.3 Online Tools for Professional Uses and Research, and the Networked self***

Various online tools could be used as not only communication and educational tools, but also as a multi-purpose professional tool (Virkus & Bamigbola, 2011, p. 487). Ullrich et al. (2008) noted in a study of the use of Web 2.0 for learning and research that academics used Web 2.0 for research as well. A study by Tötteraman and Widen-Wulff (2009) conducted among university staff and researchers regarding knowledge creation between them, found that online tools encouraged new methods for scholarly communication and collaboration. Before going into the description of the way these tools are used in professional and scholarly and research communication, it is important to provide general picture of different types of academic online identities.

Barbour and Marshall (2012) addressed the importance of academic persona or online identities, which is considered essential for academics. Through their exploring of the academic's work in digital communication area, they identified five types of academic persona or online identities. The first type is 'the formal self or static self' which use these platforms in the same way that curriculum vitae or staff profile are used, not allowing for contribution or participation from others as well as feedback on ideas. The second type is 'the public self or networked self' which it more about sharing ideas and networking such as engaging with other academics and researchers, commenting on others' work and obtaining feedback and discussion with other researchers. The third type is 'the comprehensive self', they use online tools in the same way as most social networking is used, to keep in touch with others and to organise a social life, it mix of public and private: academic work and personal issues. The fourth type is 'the teaching self' which focuses on students through using new media to present a teaching persona to engage, connect and discuss with students and organise such activities. The last type is 'the uncontainable self' who do not engage with new media in any meaningful way.

Turning now to present several significant studies describing the way these tools are used in professional and scholarly and research communication. Results of a recent study by Tyagi (2012) among faculty members in six Indian Universities, indicated that the majority of the faculty used online tools for the following purposes: web-based teaching and research (89.11%); interactive learning features (92.51%); to keep themselves up to date on related topic of interest (93.87%); online submission of papers (35.37%); personalised web services (12.24%); self-publishing on the web (8.16%); professional communication with others (31.97%) and entertainment (4.76%). According to that study, the majority of academics utilised these technologies for scholarly and research communication purposes such as following other researchers and making and organising resources, and publishing articles and reports. Alexander (as cited in Sykes et al., 2008) reported that researchers can benefits from using social bookmarking, for example, they can connect with others "who share the same interests and who could become potential collaborators", and they can create "a multi-authored, bookmarked page that might ultimately benefit the entire team when working on a project" (p. 533-34). Virkus (2008) pointed out that

social media helps promote collaborative work with tools that facilitate the aggregation, organisation and management of knowledge.

Online tools help in demonstrating the diversity of individual research interests, which expand learning and knowledge sharing for all (Virkus as cited in Shafique et al., 2010). They also help students with regard to their professional development and research. For example, blogs were specifically used as research diaries including students' work in progress; and they also received feedback and comments from both the academics and other students (Chong, 2010), and social media websites such as CiteULike, Technorati, Connotea, Blogger, Twitter, wikis, were used for communication and research work (Shafique et al., 2010). However, results of the study by Garoufallou and Charitopoulou (2011) concluded that students did not recognise the importance of social networking to their studies and their professional lives, and the majority of them use these tools for fun and curiosity. There is less awareness among students regarding using these tools for scholarly and research communication.

Undoubtedly, those online tools play an important role in facilitating scholarly and research communication. For example, Facebook has changed the way researchers communicate with others, helping in sharing knowledge between researchers via the exchange of articles, posting comments and discussing relevant topics. LinkedIn and Academia.edu are two professional SNSs used in collaborative research through following the latest research in a field, updating, communicating with other professionals in the field, self-publishing on the web, and sharing knowledge. Other online tools such as blogs help researchers in making space for their own works and articles, and they create a forum where researchers can receive comments from others researchers. Furthermore, other tools such as social bookmarking provides researchers with hyperlinks to useful resources with the ability to organise and manage them; social references can provide researchers access to online libraries and information centres, for locating and retrieving published scholarly communication.

It is important to note that some academics use email for this purpose rather than these tools as some of them do not trust these tools. For example, Procter et al. (2010) explored the use of online tools they characterised as 'Web 2.0 services' by

UK researchers for the purpose of scholarly communication. One of the main findings of this study is that “many researchers are discouraged from making use of new forms of scholarly communications because they are unable to put their trust in resources that have not been subject to traditional peer review” (p. 4051). Another study by Madhusudhan (2012) surveyed 160 research scholars at University of Delhi in order to explore how they integrated SNSs into their research work. The study found several problems associated with SNSs regarding their daily communication for research work: privacy concerns followed by cyber-bullying aggravated harassment transmitted through technological means; unwanted attention from others; data security (e.g., hacking, identify theft); and access denied by a university.

### **3.5 Online Tools and LIS Education**

#### ***3.5.1 Online Tools with LIS Curriculum***

The importance of these various online tools in an educational context has taken root in many universities, and, LIS educators have been among those utilising them in their learning and teaching. The adoption and use of these tools in LIS education can improve the quality of academic training and enhance student learning while academics and students in LIS are generally heavy users of the internet and technology. It is very important to adopt and utilise these tools in LIS higher education for two main reasons. The first point is that LIS students will increasingly be using various online tools in their social lives, and they expect to use these tools within their courses. Armstrong and Franklin (2008) reported that:

Students will increasingly be using Web 2.0 technologies in their social lives, at work and in previous study, and will begin to expect that their courses will make use of them too, in the same way that we have seen students increasingly expecting the provision of online material both within their virtual learning environment and from the library (for instance through the provision of online journals) and, perhaps more importantly, because Web 2.0 provide a new set of powerful educational affordances. (p. 12)

The second point is related to the LIS student knowledge of latest technologies as a component of their disciplinary knowledge and skills as Partridge, Lee and Munro (as cited in Terrell, Richardson & Hamilton, 2011) state:

Graduates entering information professions such as librarianship, archiving, records management, information architecture, information and knowledge management need to be good communicators, able to solve problems, familiar with the latest technologies, and be able to embrace, adopt and adapt them as required. (p. 846)

LIS has become more technically demanding (Kules & McDaniel, 2010), and therefore students must have knowledge of ICT and the latest web-based technologies. They need to develop new skills and knowledge to survive in the emerging online information environment. LIS academics need to ensure that their graduates are well equipped with IT skills as well as good English language communication skills (Al-Suqri, Al-Kindi & Al-Sarmi, 2013).

However, before one can determine how to develop LIS curriculum within online tools, it is very important to understand the perceptions educators and students have toward online tools, and the ways they interact with them. Stewart (2009) conducted a study among a select group of teacher-librarians in Jamaica to assess their knowledge about Web 2.0 tools. The study found that librarians had limited knowledge of these tools, most of which they had gained from workshops and conferences they attended. However, they were aware of SNSs, particularly Facebook and MySpace. Sarrafzadeh et al. (2010), exploring the use of Web 2.0 by LIS academics in Iran, argue that LIS academics had good level of familiarity with blogs, wikis, YouTube and Facebook, and limited familiarity with RSS feeds, Twitter, Flickr, Delicious and podcasts. The study also found that LIS academics use some of these tools in teaching. For example, blogs, discussion groups, chat tools, file sharing tools, wikis, video sharing tools and forums were used in teaching. In contrast, Garoufallou and Charitopoulou (2011) investigated the use of online tools/Web 2.0 among Greek LIS students. Results indicated the following: most of the students were aware of the term 'Web 2.0'; web games were the most popular applications; social bookmarking was less popular, with 74% of the students

reporting that they were not familiar with it. The study also found that Facebook was the most frequently used application, followed by YouTube and Flickr. RSS, podcast, Mashups, social bookmarks and tagging were the least-used applications.

The emergence of various online tools and new technologies requires changing the way LIS academics interact with the internet. LIS educators are responsible for qualifying and preparing graduates who will be able to apply online tools in their future work so that they can add value to their organisations. Many Library and Information Sciences Departments (LISDs) have responded to the impact of online tools by introducing these tools to students in their classes. For example, five LISDs in Australia, Ireland, Lithuania, Slovenia, and the United Kingdom responded to the impact of online tools by introducing those services to students as curriculum topics and as tools for teaching and learning (Bawden et al., 2007). Luo (2009) provided a good example of how librarians used online tools/Web 2.0 in the LIS curriculum. In that study, online tools were adopted and used to organise and deliver content in information literacy courses. In those courses, librarians used blogs to publish new content or review lectures notes. They also used a wiki as a place to organise teaching materials, to hold discussions, and to deliver content. They used social bookmarking to locate, organise, and share web resources about courses content. They used YouTube to create videos to show students how to access and use library databases and other resources and uploaded videos for the class to view.

Within online tools studies, the use and adoption of these tools is unclear. The actual use of online tools in the context of teaching and learning in a specific field, and social software support also needs to be more fully discussed. Shifting from an emphasis on these tools to processes within a curriculum would add new value to the teaching as well as to student learning. This is very important due to the evolution of information institutions such as libraries, and due to the influence of online tools on all aspects of librarians' professional lives. Therefore, new roles must be considered for librarians and information professionals that are reflected in the studies of new market demands (Sarrafzadeh et al., 2010; Partridge et al., 2010; Al-Daihani, 2010). The next section presents a brief discussion in regards to adoption and using these online tools in library and information workplaces.



### ***3.5.2 Online Tools in Library and Information Workplaces***

The main purpose of this section is that libraries are the main employers of LIS graduates. Exploring the level of adoption of these tools in libraries can help to draw an overall picture of the prevalence of these tools in libraries. This will reflect their experience and knowledge, and how departments of information studies should act in regards to this; knowledge and experience of these technologies encountered in their LIS curriculum will help them to practise in their future workplaces.

“Library 2.0 consists of four essential elements and differs from Library 1.0 in several aspects. These elements feature user-centered, multimedia, socially rich, and communally innovative” (Maness, as cited in Xu, Ouyang & Chu, 2009, p. 324). According to this view, library services should find a place in the social digital world and utilise these technologies and tools for promoting the library. For this, LIS graduates need to be very knowledgeable of these technologies. LIS educators need to explore how to take advantage of the various online tools in teaching students about and within these technologies.

The term ‘library 2.0’ was first coined by Michael Casey in 2005, and it refers to using and shaping ‘Web 2.0’ tools in library services or integrating these technologies into a library. This research is not intended to focus on ‘library 2.0’ or ‘librarian 2.0’ aside from highlighting a few studies in order to give an overall view of the use of these technologies in libraries. An early study of Facebook by Charnigo and Barnett-Ellis (2007) conducted among 126 academic librarians, investigating their perspectives toward Facebook as an online network for students. The overwhelming majority of librarians were aware of Facebook’s existence. Out of 126 librarians, 114 had at least heard of Facebook; 24 were not aware of Facebook. The study found that Facebook has not had any real impact on library services. The study also found that there is a lack of concern among librarians regarding the internet and privacy issues. However, the results of this study may not reflect the current impact of Facebook due to the date of the study. A study by Linh (2008) intended to provide a clear picture of the use of online tools in Australian university libraries and found that 32 out of 47 Australian university libraries deployed one or more online tools.

Another study by Xu et al. (2009) investigated the use and adoption of online tools/Web 2.0 in 81 academic libraries in New York State through analysis of their websites. Half of these libraries adopted and used online tools such as blogs and RSS. The study found that the use of specific online tools in academic libraries could play an important role in developing library services and operations. They found that blogs are mainly used for news bulletins in the academic libraries; however, podcasts are the least-adopted technology. A study by Han and Liu (2010) investigated the use of online tools among 38 top Chinese university libraries' websites. The study found that most of the libraries used online tools by adopting tools such as Catalog 2.0, RSS, IM, blogs, wikis and SNSs in their services. Another important study by Kim and Abbas (2010) also found that RSS and blogs were widely used by the libraries surveyed. There are other many studies addressing the use of online tools in libraries services and operations, particularly SNSs such as Facebook (e.g., Barsky & Purdon, 2006; Barsky, 2006; Barsky & Giustini, 2007; Chua, Goh & Lee, 2008; Linh, 2008; Gavgani & Mohan, 2008; Boos, 2009; Philbrick, Cleveland & Pan, 2009; Srivastava, 2009; Lemley & Burnham, 2009; Kim & Abbas, 2010; Han & Liu, 2010; Al kindi & Al-Suqri, 2012; Al kindi & Al-Suqri, 2013).

The trends for libraries to adopt and use these tools require graduates with not only knowledge in the field but also skills in shaping and using these types of technologies in innovative ways in order to operate them more effectively. It can be noted that many libraries attempt to adopt these online tools to improve library services and to meet new generation needs. However, are LIS graduates in the GCC ready to take on this assignment? The research will also highlight the use of these tools by students in Oman.

### **3.6 Challenges and Barriers for Utilising Online Tools**

Before going into the discussion of challenges and barriers for adopting the use of online tools, it is useful to describe several factors or motivations adopting the use of various online tools by students as well as academics. In fact, these factors are similar to the reasons often given for social networking and more general uses of the internet. Some of these factors are explored below.

There were many factors and motivations cited in the literature regarding using and adopting online tools. Some of these motivations are: maintaining existing relationships; establishing new ones; meeting new friends/people (Lampe et al., 2006; Ellison et al., 2006; Stern & Taylor, 2007; Joinson, 2008; Bosch, 2009; Pempek, Yermolayeva & Calvert, 2009; Arteaga Sánchez, Cortijo & Javed, 2014); for entertainment and passing time (Stern & Taylor, 2007; Joinson, 2008; Pempek et al., 2009); for sharing news (Al kindi & Al hashmi, 2012), and for learning and teaching purposes (Sandars & Schroter, 2007; Grith & Liyanage, 2008; Bosch, 2009; Pempek et al., 2009; Muñoz & Towner, 2009; Berg, 2011). The characteristics of these tools might also motivate people to use them. For example, most online tools are free; easy to use; and flexible. As mentioned previously in section 3.3, most online tools are cross-platform, which allows users to access and use them any time and access is not strictly limited to particular users, and all software is available online. The availability of communication devices such as smart phones also motivates people to use these tools. These tools can be downloaded, installed and used easily through smartphones.

It is also important to clarify that academics are facing challenges in adopting and using online tools in learning and teaching contexts. One of these challenges is related to knowledge, awareness of and skills in using these tools. According to Majhi and Maharana (2011), insufficient knowledge and skills to use these applications is one of the challenges frequently encountered. They added that student lack of awareness about the other online tools/Web 2.0, particularly for learning purposes, and lack of academic skills related to the uses and applications of social computing tools in learning, are other problems regarding using these applications in teaching. This result is similar to early study of Sandars and Schroter (2007) who found that lack of knowledge and skills in how to use online tools were challenges in adopting and using them in education.

The presentation of identity and privacy concerns related to Facebook is one of the main issues of concern for many authors in the academic arena (e.g., Gross & Acquisti, 2005; Kanter, Afifi & Robbins, 2012; Stutzman, Gross & Acquisti, 2013). Ellison et al. (2006) added that the relatively open nature of the information combined with the lack of privacy controls is one issue of concern related to the use

of Facebook. Privacy and meaningful limits are critically important factors or challenges that impact on the use of online tools as pointed out by del Val, Campos and Garaizar (2010):

Web 2.0 platforms promote participation and new content publication, but they usually forget about privacy issues. Mediocre or incorrect information can remain accessible on the web for years, lasting after the end of the author's academic career, and becoming a problem during professional life. (p. 1755)

Mott (2010) reported that using online tools or technologies can bring risk to education such as limited institutional control over data and a lack of centrally managed and aggregated group rosters. del Val et al. (2010) list several challenges and problems detected during their experience with the adoption and use of online tools/Web 2.0. These are:

- Flexibility: “Course content is not stored in a centralized and static location anymore. Instead, the content generated by teachers and students is scattered over the Internet, and may be compiled.” (p. 1755).
- Lack of ownership: Service providers disclaim any liability or responsibility for any loss, and educators or academics lose control regarding technical infrastructure, which may be lost when using Web 2.0 platforms.
- Confusion: Downes indicates this (as cited in del Val et al., 2010) as follows: “Teachers are not students' best option to share spare time with. They may take it as an invasion of privacy, so it is not recommended to try to be best friends” (p. 1755).

These factors are supported by Wise et al. (2011) who reported:

An important issue concerning Facebook in an academic context is that the lack of control an instructor has over the interface severely limits its usefulness as a tool for direct education. While instructors can contribute content, they have no control over the structure or appearance of pages and no means of editing or moderating student interactions with content once posted. (p. 1340)

There are other problems related to the academic community. For example, Tekinarslan (2008) noticed a few problems while investigating the use of blogs in an undergraduate class for teaching and learning. He noted that some students, for example, copy information from online sources and just paste it into their blogs without mentioning the sources. He reported his experience by saying that “some students plagiarised by copying and pasting from the online resources without paraphrasing and without citing any references when creating the content of their blogs”. The study recommended that all students should be notified about copyright issues regarding the content for blogs. Popescu (2010) also found a few difficulties while investigating students’ attitude towards the use of Web 2.0 tools. The difficulties that were identified include students refusing to cooperate with other students; a high level of time investment; and the need to expose one’s work, ideas and thoughts to others. Another problem is “finding academics who are willing to accept change and adopt pedagogical approaches open to student-contributed learning resources” (Cain & Fox, 2009, p. 9),

Others challenges include: linguistic factors (Hughes, 2005); and the possible need to “re-configure the practices, roles and responsibilities of educational systems and practitioners” (Crook et al., 2008, p. 34); technological, motivational, and inter-organizational (Maxwell & Angehrn, 2010); learning preference, lack of time, quality of resources and difficulties with information and communication technology access (Sandars & Schroter, 2007). Other studies also highlighted several barriers regarding e-learning in organisations which might also be the same factors that prevent academics from using online tools (see Mungania, 2003).

The use of ICT and online tools for collaboration and for educational process enhancement presents a challenge to LIS educators (Virkus, 2008). Several factors were found as barriers when adopting these applications for teaching and learning. Internet filtering and the blocking of some internet applications and services is an issue in some countries. For example, in Iran, as Sarrafzadeh et al. (2010) state, the most inhibiting barrier to the use of online tools is internet filtering, where the most popular online tools such as Facebook, YouTube, Flickr and Twitter are blocked by the government even for educational and academic purposes. Lack of access to high-speed internet while working, and lack of training, were other barriers to the use of

online tools (Sarrafzadeh et al., 2010). Stewart (2009) found that insufficient access to computers, the inability to connect to the internet, and school policies are the primary reasons that library science teachers did not use online tools while working. Chawner (2008) conducted a study among 224 New Zealand library and information management professionals, identified several barriers and problems regarding the use of Web 2.0: institutional barriers (e.g., firewalls or filtering software that limited access to these services); personal barriers (e.g., lack of confidence/skills, lack of time and lack of interest); and technological barriers (e.g., lack of access to broadband).

In summary, the barriers and challenges can be divided in four categories: challenges with academics (e.g., lack of knowledge, experiences; teaching style – accept change and adopt pedagogical approaches, etc.); challenges with students (e.g., lack of online tools literacy including copyright issues and knowledge, experiences of it, learning style or/and learning preference, etc.); challenges within an application itself (e.g., privacy and security, design and form of application, etc.), and challenges within an organisation (e.g., management and technical support, lack of training, etc.).

### **3.7 Social Shaping of Technology (SST)**

This research adopts SST approach to study the shaping of internet and online tools. Therefore, it is necessary to background the idea of SST, which attempts to explain the relationship between technology and society or/and the intersections of technologies and people. There have been many investigations that rely upon SST theory, and many scholars and authors have sought to clarify and apply this concept in different fields (see Dutton, 2013; Williams & Edge 1996; Bijker & Law 1992). While there is no simple definition of SST, this section provides an overview of key of ideas and concepts within the broad area of SST, focusing on the role of academics in shaping and utilising online tools in teaching.

The phrase ‘SST’ originates with MacKenzie and Wajcman (MacKenzie and Wajcman, 1985). SST offers an examination of the particular processes and context that structure the technological innovation (Howcroft, Mitev & Wilson. 2004).

MacKenzie and Wajcman (1985) argue that SST is useful to not just examine the 'social impacts' of technology but also to the study of what shapes the technology which is having these impacts. SST can explain the impact that groups such as academics and students have in shaping the internet, and the way in which the internet changes the way they teach and learn. Williams and Edge (1996) argue that technology and innovation are impacted by social factors. They summarised SST as follows:

“SST research investigates the ways in which social, institutional, economic and cultural factors have shaped:

1. the direction as well as the rate of innovation;
2. the form of technology: the content of Technological artefacts and practices;
3. the outcomes of technological change for different groups in society”. (p. 4)

In other words, SST concentrates on the effects of society on the internet, rather than just the effects of the internet on society. Emphasising social factors that shape internet change and use will help to consider these factors in education. Academics might shape internet technologies and change their teaching style. According to Kang (2009):

Social change is subject to the nature of the Internet, and the dissemination of the technology is subject to the nature of society. This perspective may appear to suggest that the Internet and society interact with and influence each other, but it does not. Social conditions determine Internet diffusion, and the Internet does what it is programmed to do within society. It is nothing more [SIC] a combination of two sets of determinism at work on different levels: technological determinism and social determinism. (p. 13)

The internet with various online tools and forms has changed society, it has caused a change in the way people communicate and collaborate with each other or/and with others. However, the internet is ultimately driven by societies; they can play a particularly powerful role in shaping and adopting online tools in effective ways to achieve their different goals.

SST approach is chosen because it encompasses a broad perspective that enable the researcher to move beyond a narrow by focus on how academics design and appropriate these technologies in actual education settings, and to better understand the effect on learning and teaching. SST has gained increasing recognition in recent years (Williams & Edge 1996). Moreover, it is considered as an umbrella for four broad academic traditions (see Williams & Edge, 1996). SST is employed in this research to gain a clear understanding of the following:

- The way in which online tools are adopted and used by academics in Oman in a range of contexts, including professional and personal, and specifically for teaching and learning, with reference to other uses of technologies for teaching and learning, and the social context of Oman.
- The way in which online tools are adopted and used by university students in Oman for personal uses, and specifically for learning.
- Determine the reasons why the academics as well as students use or do not use online tools in their teaching and learning, focusing on incentives for and barriers to adoption and innovation.

By doing so, SST will help to recognise opportunities to influence online tools use in GCC, particularly Omani society, at an early stage. The SST approach may be valuable in understanding the role played by academic community include academics and students within the context of internet development and change in education, and the role of internet in changing education.

### **3.8 Gender and Online Tools**

“While technology does not have essentially masculine or feminine characteristics, its meaning and use differentiates between men and women and is dependent on social and cultural situations within both public and private spheres” (Oblasts, as cited in Ricigliano & Houston, 2003, p. 2). It has been argued, however, that, gender is an influence in the shaping of technology, and it is one of the categories considered in SST (Sørensen, 1992). There are many studies that have highlighted the approaches and theories related to the study of gender and technology. This research focuses on one aspect of the topic; whether there are any differences



between females and males in regards to adopting and utilising various online tools. This section presents an overview of a range of research related to gender and online tools such as Facebook, YouTube and blogs, beginning with material drawn from a Western context, and then considering this in relation to the specificities of the GCC.

Existing studies have concluded that “women were significantly less likely than men to use the internet at all in the mid-1990s, but this gender gap in being online disappeared by 2000. However, once online, women remain less frequent and less intense users of the Internet” (Ono & Zavodny, 2009, p. 111). Many studies have indicated a gender difference in using the internet, and that males are still generally more frequent users. For example, a study by Joiner et al. (2005) conducted among 608 undergraduate students included 490 females and 118 males. One of the objectives of this study was to investigate the effects of gender on use of the internet. The study found male students used the internet more than female students, and they were more likely to have their own webpage, use game websites, download material and use other specialised websites for communication. Wasserman and Richmond-Abbott (2005) also found that males are more likely than females to chat on the web, but females are slightly more likely to use email, and they used different types of sites than males.

In recent years, the emergence of new online tools such as Facebook and blogs has seen further gender differences emerging in relation to the online activities. For example, Khan, Jhangiani Kar, Lewis and Schmitz (2010) found in a study among undergraduate students the following: females spend more time on the internet for academic and work-related purposes; they spend more time on the internet to get information in general and for studies, and online shopping. In contrast, males spend more time on the internet for personal purposes, downloading free software, accessing online newspapers and magazines, and playing online games. Khan et al. (2010) concluded that female students were more likely to use the internet for information and socialising, while males were more likely to use the internet for entertainment.

There are significant studies that demonstrate differences between genders in regards to the way they use and adopt SNSs and other online tools (e.g., Thelwall, 2008;

Peluchette & Karl, 2008; Kolek & Saunders, 2008; Valenzuela, Park & Kee, 2009; Sheldon, 2009; Barker, 2009). Kolek and Saunders (2008) indicated that females are more likely to have a Facebook account than men. However, men (21.7%) are more than twice as likely as women (8%) to post phone numbers on Facebook. This is supported by Valenzuela et al. (2009) who conducted a study among 2,437 students with Facebook accounts from a predominantly undergraduate university and a commuter school in the USA. The study found that female students were more likely to have a Facebook account than male students; the proportion of female undergraduate students using Facebook in the U.S. was 54%, compared to 46% of male students at the time of conducting this survey.

Results from a survey by Sheldon (2009), which include 260 students enrolled in introductory communication studies classes, showed that 42% of male students had a Facebook account compared with 58% of female students. The study found that men and women differ in their motives for Facebook use; female students used Facebook to maintain their relationships, to be entertained, and to pass time, while male students used Facebook to develop new relationships. Female students saw their friends on Facebook as “real” friends. The study concluded that females “are concerned and evaluate their interpersonal relationships more often than men” (p. 55). Similar results were found by Mazman and Usluel (2011) who investigated the use of SNSs among 870 Facebook users including high school, undergraduates and graduates, using an online survey. Main uses of Facebook were: maintaining existing relationships; making new relationships; and for academic purposes. However, the study found significant gender differences in all of the activities as follows: females used Facebook more for ‘maintaining existing relationships’, ‘academic usage’ and ‘following agenda’ more than males. While males use Facebook for ‘making new relationships’ more than females. Another recent thesis by Thompson (2012) investigated gender differences of undergraduates’ self-disclosure on Facebook, using an online survey. The study was conducted among students who were enrolled in an introductory communication course at a Mid-Atlantic university (507 participants, 244 males and 263 females). The study found that females were more likely to disclose personal information about family, friends, holidays, school, and religion, while males were more likely to disclose personal information about politics and sports.

Other studies have also found differences between males and females in regard to blogging. For example, Pedersen and Macafee (2007) conducted a study of 48 female and male bloggers in order to explore their practices and attitudes regarding blogging. Data were collected using questionnaires and from their blogs. The study found that both females and males are blogging mainly as a leisure activity, and they find the same range of satisfactions in blogging. However, women were more likely to blog as an outlet for creative work. Jones, Johnson-Yale, Millermaier and Perez (2009) found in a study among U.S. college students that “female college students appear hardly more likely than male college students to keep a blog as 34% of females compared with 31% of males’ kept blogs” (p. 255). The study also found that female students were more concerned about privacy than male students, they were very concerned or somewhat concerned about their personal data online, however, they participated equally online and their concern did not affect their online activities. The study concluded that the most frequent uses of time online is for communicating socially and females were more likely to do this rather than males. There are other important studies investigating gender differences towards the use of blogs or blogging (e.g., Liu & Chang, 2010; Lu & Hsiao, 2009; Huffaker, 2004).

Molyneaux, O’Donnell, Gibson and Singer (2008) explored the gender divide on YouTube through analysis of the creation and reception of vlogs, using a random sample of YouTube vlogs. The study found that men are more likely to post comments and videos on YouTube than women (40% of men compared to only 13.3% of women). Another recent study by Budden, Anthony, Budden and Jones (2011) conducted among college students, explored the level of use of five applications including Facebook, MySpace, YouTube, television viewership and radio listenership. They found a difference between males and females regarding MySpace, Facebook and YouTube. Male students spent a statistically significant greater amount of time on YouTube than females, while female students spent more time on MySpace and Facebook, and spent more time on non-internet media (radio and television), than males. A recent study by Martinho (2012) reviewed the recent literature on online tools to identify gender differences in the use of these tools. According to that study, females use more online networks than males, and the percentage of female weblog authors is much higher than that of male authors; they are more active and write more words in online discussion forums than males.

However, males are more likely to download music and video files; edit wikis, post more mentions to other participant's posts and make more comments than do females.

On the other hand, some studies found no differences between males and females in adoption and use of online tools. For example, Sandars et al. (2008) conducted a study among first-year medical students in order to identify the nature and extent of the use of social software including blogs, social bookmarking and SNSs. Results indicated no significant difference between males and females. Teo (2008) also found no significant gender difference in internet usage and attitudes as a result of a study among pre-service teachers. Another study by Kalpidou, Costin and Morris (2011) conducted among 70 undergraduate college students who recruited from multidisciplinary introductory and upper-level classes. One of the objectives of this study was to investigate whether there is a difference between male and female students in the use of Facebook. The study did not report any gender differences in the use of Facebook.

Overall, it seems that female students are likely to use Facebook more than males, suggesting female students have a more positive attitude towards SNSs than males. In contrast, YouTube is more popular among males than females. Moreover, in very broad terms, it seems that females tend to use these applications more for learning or socialising in comparison to males, while males tend to use these applications for personal entertainments more than females. In western societies where students in higher education, regardless of their gender, can communicate, collaborate and meet at any time at any place, this might be the case.

However, this is not the case in parts of the Arab world, particularly in GCC countries such as KSA and Oman. "Many families only approve giving male members access to the internet, speculating that females who use the internet will establish romantic relationships with males" (Wheeler as cited in Sharif & Al-Kandari, 2010, p. 42). There is a reported gender gap in internet use in the GCC (Sharif & Al-Kandari, 2010). The United Nations Development Programme on Governance in the Arab Region (as cited in Elnaggar, 2008) reported that:

Access to ICT, especially the Internet, is particularly difficult for women in poorer and less urbanized areas where telecommunications infrastructure is poor. The problem not only involves the lack of access to computers, telephones, and other resources but also a severe absence of training and application opportunities for women and girls. (p. 282)

Moreover, “while women in the beginning of Islam enjoyed equal rights and full participation in the economy, politics. However, women in the Gulf countries had been influenced by society's traditions” (Al-Yousef, 2009, p. 3). For example, in Oman society women are less involved in ICT, and this is “due to challenges related to a traditionally male-dominated ICT sector, unequal access to training, the lack of Arabized internet content and training, high internet connectivity costs, and the lack of awareness and policy advocacy, among others” (Leahy & Yermish, as cited in Elnaggar, 2008, p. 283). Survey results from the same study of Elnaggar (2008), which was intended to provide a gender-sensitive assessment of the ICT space in Oman, found that socio-cultural norms, and access and training are the primary factors that inhibit Omani women from entering and adopting careers in ICT.

It is also useful to provide a short overview of statistical data regarding online tools and gender differences in the GCC. Malin (2009; 2010a) presents some statistics regarding use of Twitter as follows: GCC has 8,212 registered Twitter users with the UAE accounting for approximately 60% of all users in the GCC. More than half of the platform's users in the Arab world are males; women around the world make up a slightly larger Twitter demographic than men, 53% over 47% in 2009 as shown in a global Twitter survey. “Only 37% of Facebook users in MENA are female (compared with 56% in the USA and 52% in the UK). Only Bahrain and Lebanon Facebook communities approach gender equality with female users accounting for about 44% of total users” (Malin, 2010b, p. 3). Two main points can be gleaned from these statistics: firstly, GCC males are more likely to use Twitter and Facebook than GCC females; secondly, the acceptance of these tools among internet users in the GCC can be observed.

Today, due to developments in communication devices, both genders have access to the internet through advanced technology devices such as smartphones. Given the

existing gender differences in use and adoption of online tools, and the importance of understanding how members of each gender see and use online tools in education, the research will also explore gender differences and thoughts regarding online tools and 'Web 2.0' phenomenon in the GCC, and attitudes towards different activities on the web, with respect to personal and learning purposes.

### **3.9 Online Tools in Education in the GCC: Opportunities and Challenges**

Most of the research in the GCC carried out by scholars and authors in the area of e-learning, distance learning systems, computers and the internet has focused more on incentives for and barriers against use (e.g., Mungania, 2003; Schoepp, 2005; Al-Wehaibi et al., 2008; Al-Hawari, 2009; Vrazalic et al., 2010). Very few studies have explored online tools including social media in teaching and learning contexts in the GCC (Behl, Fitzgerald & Vrazalic, 2007; Al-Hawari, 2009; Vrazalic et al., 2010). Likewise, in Oman, most of the studies focused on e-learning and its barriers and challenges in education, and also it also should be noted that while studies deal with various online tools, most of them do so theoretically. The study reviews some of the previous research as indicated in the next page (Table 3.2).

Turning now to present several significant studies regarding the use and adoption of these tools in the GCC. A study by Al-Daihani (2010) explored the use of social software by Master of LIS students at Kuwait University and at the University of Wisconsin-Milwaukee. The study found that the majority of LIS students from both schools are aware of social software applications and their use. The study also found that blogs, video sharing, collaborative authoring, communication and social networking received the highest mean usage scores. Several challenges were found relating to the use of these applications, including lack of technical support, lack of perceived usefulness, reluctance or inability to use the internet for long periods of time, no time to learn about them, concerns about information privacy and no encouragement to use them.

Table 3.2 A Short Literature Review of e-learning in Oman

Research	Participants	Main objective	Type of data	Basic Findings
Abdelraheem & Al Musawi (2003).	Students and faculty members	To explore e-learning in higher education in Oman	Workshops and online survey	Students reported the following negative points: -Technical hitches, including Internet delays and interruption of WebCT service -Difficulties using onscreen materials for learning -course tutors felt that e-learning is a time-consuming method, specifically in the areas of designing online materials, downloading assignments, responding to students' e-mails and sharing ideas with them.
Naqvi (2006)	Students	To explore the students' feedback on the use of WebCT and its impact on students learning	Survey	'While students had positive attitudes toward WebCT and in turn had better learning and understanding of the course, most of them preferred face to face mode but supported with online digital contents for comfortable learning'.
Al-Musawi (2007)	Faculty members and technical/administrative staff	To discover the difficulties and develop of educational technology utilization in Omani higher education	Survey	Two main factors were found: -Lack of equipment/facilities, specifically the new technologies such as Intranet points and multimedia labs. -Lack of training
Behl, Fitzgerald & Vrazalic (2007)	Students	To explore the perceived barriers to e-learning in UAE and Oman by students	Online survey	Not provided
Al-Senaïdi, Lin, Poirot (2009).	Faculty members	To investigate the perceived barriers to adopting information and communication technologies (ICT) in Omani higher education	Survey	Several factors were extracted from the survey: lack of equipment, lack of institutional support, disbelief of ICT benefits, lack of confidence, and lack of time.
Surry, Grubb, Ensminger & Ouimette (2009).	Faculty members	To determine the factors/barriers to implementation of web-based learning in colleges of education	Survey	-Lack of financial resources, infrastructure, and support. -Lack of social interaction between faculty who have taught online and those who have not. -The factors that seen as enablers in implementation of web-based learning were organizational culture, policies, a commitment to learning, and evaluation.
Al-Gattoufi, Al-Naabi, & Gattoufi, (2011).	-	To analyze the readiness of the current learning system for the gradual shifting to a more IT assisted teaching system in General Directorate Colleges of Education in Oman, focusing on Blackboard and Moodle.	An evaluation of the available services and users and the analysis of the experimental implementation of an open source LMS.	'Implementing a new LMS or changing an existing teaching approach is likely to feel daunting, time-consuming and risky, especially when technology is involved' (p.25).
Ahmad & Khanjari (2012)	Students	To explore the effect of Moodle on students' learning.	Survey	-Maximum students preferred face to face approach but supported with online material and activities (like E-mails or chat sessions etc.). -students were precisely positive when they used Moodle as a learning tool, they were more confident. -Students believed that E-learning is very useful, but cannot replace face-to face learning. -students attitude towards e- learning and Moodle are positive as they reported that Moodle is ease of access of the available teaching materials, exercises and updated information.

Al kindi and Alhashmi (2012) conducted a study among students at Shinas College of Technology in Oman in order to explore use of SNSs. The study revealed that the major reasons for frequent use of SNSs are finding information and sharing news. The study also indicated that lack of experience as well as insufficient time and IT skills are barriers to the use of SNSs. Google Groups, Facebook and Yahoo! 360 are the most popular SNSs used by students. Another recent study by Al kindi and Al-

Suqri (2013) conducted among academics at the college of Art and Social Sciences at SQU in Oman, using an online survey, found that 57% of academics are aware of SNSs usage; 43% are not. The main reasons for using SNSs were finding information and communicating with old friends. Academics' main SNSs activities were gathering information and gaining new knowledge. The study also found two main reasons which affect academics use of these tools were: insufficient time and level of IT skills. The most popular SNSs among academics were Facebook, Google groups and Twitter.

Detailed examination of social media use was conducted by Al-Jenaibi (2011), who explored social media use in the UAE including blog, micro-blog, social network service, video-sharing service, social bookmarking, image-sharing and opinion sharing sites, using both quantitative (survey of 286 males and 270 females) and qualitative methods (focus group session involving five females and four males). The following results were found: the majority of the respondents (86%) reported that they used Facebook, followed by LinkedIn at 56% and MySpace 36%; Twitter was used by many of the respondents as their preferred micro-blogging site, YouTube was reported to be the primary site for sharing videos, and use of photo-sharing sites was recorded to be small (24% used Flickr, 12% used Photobucket). Respondents strongly agreed that these tools have changed communication habits in UAE society, and 97 % of them agreed about the potential benefits of these tools to improve a person's communication skills. With regard to trust of these tools, the study found that most participants trusted the media they used with their colleagues and friends, however these media differ significantly from one online source to another. The study also found that "most participants agreed that the use of social media is on the rise in the current teenage and adult population-Twitter, YouTube, the iPhone, Blackberry, and iPad were mentioned frequently" (p. 19). Language and the lack of control of these media were mentioned as barriers to their use.

Much of the research in this area has been limited in scope and has not considered the adoption or value of various online tools for learning and teaching purposes. As such, most of the research in this area focused more on incentives for and barriers against their use. For example, Elnaggar (2008) found several main barriers to the use of 'Web 2.0' in the GCC as follows:



...not having access to a PC or the Internet due to the prohibitive costs of owning one, lack of community technology learning centers especially in rural and disadvantaged communities, ICT illiteracy, lack of Arabized local contents and English language knowledge and lack of awareness of ICT benefits and their effect on human life issues and decisions. (p. 287)

There are several other barriers to adopting various online tools in GCC education. Some examples of barriers include quality of internet connections; loss of privacy when disclosing information; concerns related to intellectual property when publishing online (Al-Wehaibi et al., 2008); inaccurate or erroneous data within applications like wikis and blogs (Millard & Essex, 2007); curriculum integration difficulties; an inadequate number of computers; lack of skilled professionals; and poor technical and administrative support (Behl et al., 2007). Mohamed (2011) conducted a study among 325 Arab respondents in UAE and Egypt. The study revealed that females are found to be more concerned about their privacy than males and they tend to be more concerned in taking actions to protect their privacy. It was also found that males trust SNSs more than females. However, Egyptians have greater trust in SNSs. Privacy concerns are a sensitive issue related to the SNSs in the Middle East (Borenstein, 2008). A study of Facebook by Shen and Khalifa (2010) conducted among seventy university students (35 female and 35 male) in the UAE during the 2008 spring semester, concluded that the lack of trust in the other users in Facebook might be one of the reasons that prevents females and males from expanding their social networks, however both of them did not think that the use of Facebook is contrary to their culture.

As mentioned previously in Section 3.8, that GCC had been influenced by social and cultural factors, for example, an “eminent societal barrier” in Arabian countries, as pointed by Chaurasia, Asma and Ahmed (2011) is “restriction of female access to public spaces that offer internet access such as internet cafés or in some countries, any other public places” (p. 312). Chatty (2000) mentioned that social and cultural factors affect the adoption of the internet in the GCC, where there is limited interaction between females and males and free mixing and interactions between them in many places such as higher education and transportation is not allowed. Female students are not allowed to leave the campus without their family’s

permission in some countries such as KSA and Oman (Tubaishat, Bhatti & Elqawasmeh, 2006).

Society plays an important role in utilising the internet. The government, telecommunication companies and social organisations are all playing an important role in shaping the internet through their practices and policies that reform and diffuse the internet. It is necessary to mention that GCC governments have started to pay more attention to ICT sectors, and internet diffusion as a result has experienced rapid transformation through establishing of regulatory authority, restructuring and reformation of GCC telecommunication companies and the opening of the mobile sector for competition. However, it is apparent that some telecommunications companies in the GCC monopolise internet service provision. An example is provided by Warf and Vincent (2007), who report that Qatari Telecommunications Company has had a 15-year monopoly on internet service delivery, and OmanTel is the controlling provider of fixed and mobile telephony services.

To sum up, online tools offer many opportunities to GCC for enhancing the educational environment and providing students with diverse techniques/methods in learning. Online tools, if integrated into the university curriculum, with e-learning, will support teaching and learning. The attitude is now changing in the GCC as a result of internet development and the 'Arab Spring'. The use of online tools in the education sector as well as in other purposes is inadequately understood in the GCC, and adoption of these tools in supporting the curriculum are still far from clear and need to be fully addressed. To understand better the phenomenon of 'Web 2.0' and adoption of online tools for GCC, this research examined the adoption and utilising of these tools by academics and students at one university within a particular department in order to explore their attitude towards these tools and to examine the social factors contributing to their adoption.

## Chapter 4 Research Methodology

### 4.1 Research Design and Instrumentation

#### 4.1.1 Research Design

The main objective of this study is to investigate the uses and adoptions of various online tools and applications by academics as well as students at DIS in SQU in Oman. The methodology selected for this study is a combination of qualitative (semi-structured interviews and a case study) and quantitative (questionnaire survey) techniques. The increasing use of internet applications and tools in diverse fields including education requires a deeper understanding of the various ways in which online tools are used and adopted in teaching and learning, as well as personal and professional uses, and particularly how academics utilise these technologies for teaching purposes. Combining these different methods in one study can provide an opportunity to gain a deep and wide understanding of the issues and their implications. In other words, the use of qualitative and quantitative methods can produce a deep understanding regarding the use and adoption of online tools in teaching and learning.

Mixed methods techniques have been discussed by a number of writers and scholars (e.g., Creswell, Plano Clark, Guttman & Hanson, 2003; Johnson & Onwuegbuzie, 2004; Johnson, Onwuegbuzie & Turner, 2007; Denscombe, 2008; Fraenkel & Wallen, 2000). As such, their usefulness and significance has been recognised by numerous writers and scholars and mixed methods have been employed in many recent studies (e.g., Al-Suqri, 2008; Malhiwsky, 2010). Mixed methods has been described as “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study” (Johnson & Onwuegbuzie, 2004, p. 17). Creswell et al. (2003) have supplied a clear definition of the mixed methods approach as follows:

A mixed methods study involves the collection or analysis of both qualitative and/or quantitative data in a single study in which the data are collected

concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process or research. (p. 212).

The use of mixed methods in the research can “give a rounded understanding of process and outcome” (Bazeley as cited in Giddings, 2006, p. 198) with the “ability to be inclusive of multiple approaches to a problem so there is more certainty in the results” (Giddings, 2006, p. 198). Based on the reviews of existing mixed methods research by Denscombe (2008), mixed methods were used:

- to improve the accuracy of the data; and “to produce a more complete picture by combining information from complementary kinds of data or sources” (p. 272);
- to avoid “biases intrinsic to single-method approaches as a way of compensating for specific strengths and weaknesses associated with particular methods” (p. 272); and
- to develop “the analysis and build on initial findings using contrasting kinds of data or methods” (p. 272).

Mixed methods are an appropriate methodology for use in the present study for many reasons:

- A combination of quantitative and qualitative approaches provides a better understanding of research problems than either approach alone regarding academics’ and students’ use and adoption of online tools.
- Provides a more complete picture of online tools by academics and students (Creswell et al., 2003).
- Using mixed methods will allow the separate collecting of both forms of data, maintaining the independence of the data analysis during the study. It will allow the integrate of the data in the interpretation of the final results (Creswell as cited in Malhiwsky, 2010)
- Gives strength to the research and addresses research problems from all sides.
- Obtains maximum available data.

However, mixed methods have disadvantages. Some of these disadvantages are, as stated by Al-Suqri (2008): it takes time collecting and analysing two types of data,

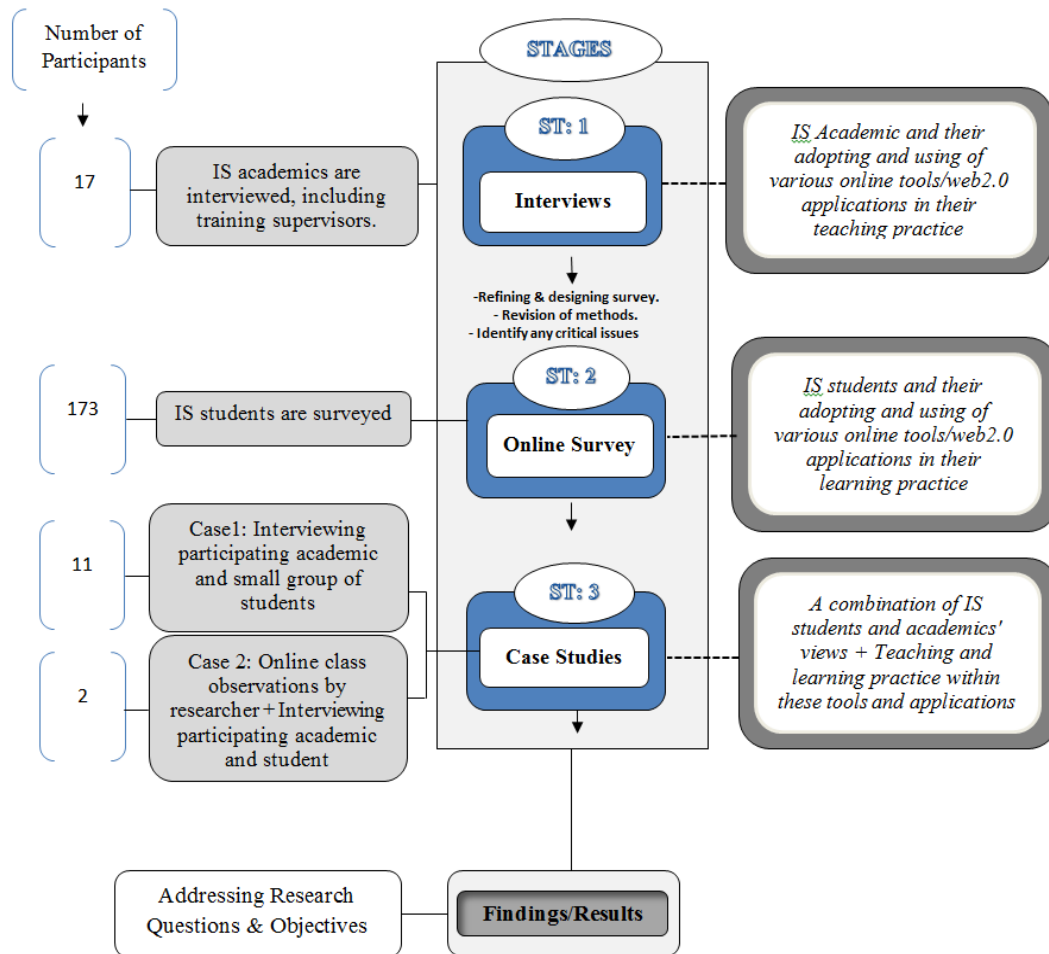
quantitative and qualitative; a possible lack of focus, as attention is required in two directions; and the need for expertise in analysis of both quantitative and qualitative data. In this study, the disadvantages of mixed methods were not detrimental for three main reasons: the implementation of these methods were conducted in a sequential manner according to well thought out stages; the costs of the study were low; and all approaches converged on the same set of objectives and questions, and therefore the researcher's focus was not dispersed.

The use of multiple qualitative and quantitative methods in order to check and establish research validity by analysing a single research question from multiple perspectives is known as triangulation. "Triangulation is the combination of two or more methodological approaches, theoretical perspectives, data sources, investigators and analysis methods to study the same phenomenon" (Hussein, 2009, p. 2). Methodological triangulation might yield results that could not be obtained by using one method (Risjord, Moloney & Dunbar, 2001). It is about using different techniques to get access to the various facets of the same social phenomenon (Olsen, 2004). One of the critical advantage in using this method as described by Hussein (2009) as "Triangulation for confirmation and completeness purposes" in order to validate qualitative results by quantitative data and thereby increase the in-depth understanding of the phenomenon under investigation by combining multiple methods (interviews, survey and case study).

Many studies use this technique in order to increase the validity and the reliability of the results; for example, Al-Aufi (2007) and Al-Suqri (2008). Triangulation methods will help in the case of the present research to produce various types of data by mixing the data from survey data with interviews and case studies, to use different sources of information which support increasing the validity of a study, and obtain a more comprehensive view of utilising online tools in teaching and learning as well as in personal purposes. However, Thurmond (2001) claims that using triangulation methods is time-consuming with regard to planning and organisation of data collection and resource intensive. This was not an issue in this research while the researcher maintained a well organised outline for each stage in the research. All resources needed in regard to samples and population were provided by DIS at SQU.

Mixed methods were achieved using qualitative and quantitative methods consisting of three stages: semi-structured face-to-face interviews, which were conducted among academics, and training supervisors at the DIS in Oman; an online survey that was conducted among 173 students at DIS; and two case studies. The research design and procedures is presented as follows:

Figure 4.1 Research Design and Procedures



The first case was interviewing participating academic and a small group of students, and the second was online class observations by the researcher, as well as interviews with participating academic and student. The combination of these methods helped in drawing appropriate conclusions and reduced the problems of validity and bias. Data from the case study was used to conduct a more in-depth analysis of practices, thoughts, reactions, feelings and opinions of the participating academics and students. The overlapping between these research stages provides a richer and truer account. In stage one, interviews were an appropriate method for obtaining

academic's attitude towards online tools in teaching, and student behaviour and response from the academic's point of view. Interviews provide a clear encounter of the academic's attitude toward using online tools and LMS in the classroom. This helped the researcher to consider the type and detail of questions when designing the questionnaire for students. In this later stage, academic views and attitudes were overlapped with student attitudes toward online tools from the survey findings.

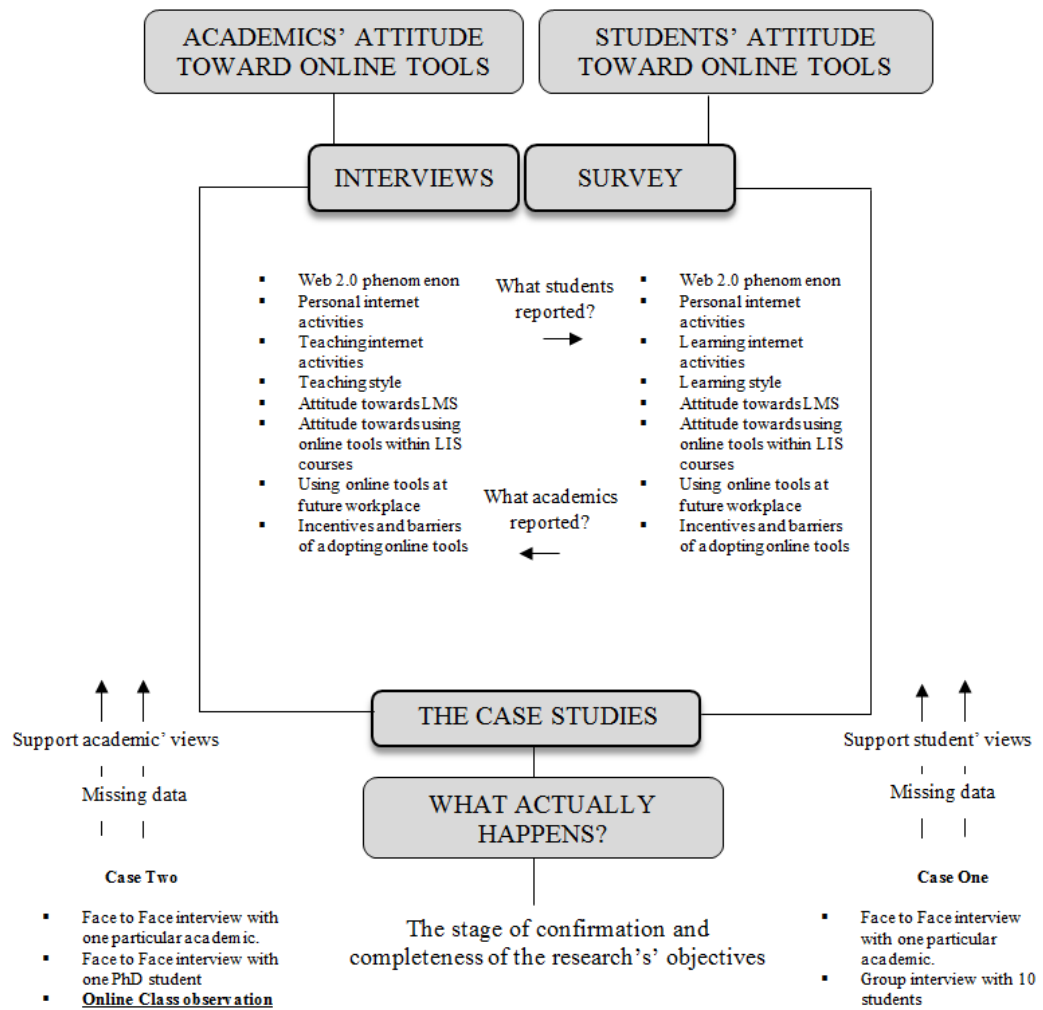
It should be noted that the thesis presents the interviews as the first stage prior to the survey while the reverse is more common. The current study focuses on academic attitudes towards online tools in teaching, using the interviews (qualitative data) as the main approach, while the survey aims to explore the students' reaction to the use of these tools as reported by the academic interviewees. Another reason for conducting the interviews as the first stage prior to the survey is to support the researcher in refining and designing the survey, revision of methods and to identify any critical issues that required revision of the research at an early stage.

Following the data generated from survey and interviews, the case studies were used to finalise and support findings from stage 1 and 2. The case studies were not intended to give a general description of online tools adopting and using rather than providing another layer of detail, access to what actually happens rather than what people (students or academics) said happens. The case studies revealed a combination of IS student and academic views using particular online tools or internet applications for teaching and learning practice. The case study supported the researcher in:

- Comparison of what happened in the class when using these applications according to different views (academics and students).
- Supporting ideas of factors that affect adopting of online tools in teaching and learning compared with what mentioned in stage one and two.
- Exploring in greater detail issues raised by academics and students in the interviews and survey.

The interplay between interviews, surveys and case studies was described in Figure 4.2.

Figure 4.2 The Interplay Between Three Stages: Interviews, Surveys And Case Studies



#### 4.1.2 Chosen Sampling/Population

This study took place at SQU, DIS. The population of interest for this study consisted of academic staff, training supervisors and students in DIS at SQU in Oman. There are critical reasons for choosing DIS as a target for this study. Most academics at DIS seek to provide a meaningful educational experience that prepares LIS students for productive roles in modern information environments. Academics are seeking to establish programs and curricula that prepare students for work environments in which digital technologies are ubiquitous. They provide training on information sources and services that now can be facilitated by using various internet applications, including 'Web 2.0' applications; these applications can be employed for information organisation (e.g., folksonomy); information sources (Wikipedia,



YouTube, podcasts); information retrieval; sharing web resources; managing and discovering scholarly references (social bookmarking sites such as Delicious, CiteULike, etc.), and information and content management (wikis). Another reason for selecting DIS is the applicability of the research outcomes to similar teaching areas such as knowledge management, information systems, IT, mass communication and Internet studies.

There are three other main reasons for basing the study on DIS. Firstly, the study might show similar results to the other LIS departments in the GCC due to the shared historical, political, linguistic and sociocultural context of these six countries and are then generalised. Secondly, the author has an established relationship with the academics at DIS at SQU which would ensure their participation in, and support for, the research. The reason for selecting one LIS department rather than several departments is that the intention of the study is to explore the study's problem as deeply as possible. The selection of one department helps the researcher look intensively at all sides of the problem and obtain the most complete data and information possible from the single case.

#### ***4.1.3 Ethical Considerations and Data Storage***

This study utilised the mixed methods approach and all data was collected from academics and students in DIS at SQU. The researcher design was approved by Curtin University, and ethics approval was received from Curtin University, Human Research Ethics Committee in March 2012. In addition, the researcher also contacted the Center for Staff Development (CSD) of SQU and the office of the Vice-President of SQU seeking approval to conduct the study. This approval is required by the University's regulations and without it no researcher can conduct a study at SQU.

All participants in this study were informed that under no circumstances would their name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from the research. All answers to the survey questions were assigned a code number to conceal the participants' identity and this information will be stored securely at Curtin University, Department of Internet Studies, for three years after the study is completed. The researcher, as an academic

member of SQU, was aware of all issues related to his research, and also had an understanding of the Oman environment, society, people, and culture and was able to communicate effectively and establish a fruitful and ethically sourced relationship with them.

#### ***4.1.4 Reliability and Trustworthiness***

As indicated previously, the research design was planned and developed in three stages or techniques. Each of these stages was developed based on planned steps. The interview schedule was pre-tested before implementation and the design of the interview was developed with reference to the existing literature, the social context of GCC, and preliminary investigation, which took place at SQU in 2011. The interviews were conducted face-to-face by the researcher, all data/information was recorded and transcribed carefully to Microsoft Word and then translated by a professional translator. All feedback and comments from the academics during the pre-testing stage were taken into consideration. All interview transcriptions were emailed to the interviewees for their review and additional comments (further details reported in section 4.2).

The questionnaire was developed based on the interview stage, initial investigation and with reference to the existing literature and research objectives. The questionnaire was piloted before it was sent to the participants, and it was checked and reviewed by three academics at DIS. The Statistical Package for Social Sciences (SPSS) was used to calculate Cronbach's alpha reliability coefficient in order to measure questionnaire reliability (further details reported in section 4.3). The following sections provide details of the three research approaches and procedures employed in this study. This includes the interviews, surveys (online questionnaire) and two case studies.

## **4.2 Interviews**

### ***4.2.1 Interview Design***

Interviews constituted the main source of qualitative information. They are a systematic way to collect information from individuals through conversation and

interrogation. According to Gray (2004), using interviews for collecting data is an opportunity to obtain highly personalised data, focused on a selected subject. As such, “Interviews are particularly useful for getting the story behind a participant’s experiences. The interviewer can pursue in-depth information around the topic. Interviews may be useful as follow-up to certain respondents to questionnaires” (McNamara as cited in Valenzuela & Shrivastava, 2002). “Interviews are ways for participants to get involved and talk about their views. Furthermore, interviewees are able to discuss their perception and interpretation in regards to a given situation” (Kajornboon, 2005, p. 2). Using the interviews in this study enabled the researcher to direct the conversation toward the topics and issues about the status of online tools or ‘Web 2.0’ usage at SQU.

Using interviews as a preliminary investigation was a means of defining the core of the research design and allowed for the enhancement of a sound research methodology. While the actual use and adoption of specified applications in teaching and learning in Oman was not well understood, the interviews proved to be an effective means of refining the survey by discovering in detail the participants’ current knowledge, practices, ideas and opinions. The answers to the interview questions therefore permitted the researcher to refine the design of the online questionnaire that was used in stage 2 as well as to identify any critical issues that required revision of the research of an early stage.

The main purpose of the interviews was to explore how academics within the DIS at SQU are adopting and using various online tools in their teaching practice. It was therefore necessary to use the interviews to:

- Explore the ambiguity and uncertainty of the ‘Web 2.0 label’ in the academic community.
- Understand the context for online tools use by DIS academics SQU with reference to other uses of technologies for teaching and learning, the relationship of these applications to curriculum being taught, and the social context of Oman.
- Identify the way in which online tools are adopted and perceived by academics at DIS in Oman in a range of contexts, including professional and personal, specifically for teaching and learning.

- Determine the reasons why IS academics use or do not use online tools in their teaching and learning, focusing on incentives for and barriers to adoption and innovation

Semi-structured interviews were selected as a means of data collection for four reasons. First, they are “suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues and enable probing for more information and clarification of answer” (Barriball & While 1994, p. 330). Second, they will “give the researcher opportunities to probe for views and opinions of the interviewee” (Kajornboon, 2005, p. 6). Third, they are “suitable in the case when respondents are not fluent in the native language” (Gray, 2004). Fourth, the flexibility in semi-structured interviewing in regard to asking more questions and additional, or complementary issues that might be raised by interviewees and these form an integral part of the study’s results (Bryman, 2004). Semi-structured interviews were therefore deemed to be suitable, so all interviewees were given the opportunity to guide the discussion and provide opinions and views on related aspects of online tools in teaching and learning.

There are six basic types of interview questions that can be asked of people. Patton (1990, p. 290-292) explained these six types of questions as follows:

- Background or demographic questions: these are about the background characteristics of the respondents.
- Knowledge questions: these are about factual information about respondents (as opposed to beliefs, opinions and attitudes).
- Experience or behaviour questions: these are about what respondents are currently doing or have done in the past.
- Opinion questions: these are about what people think about some topics or issues.
- Feeling questions: these are about how respondents feel about things. It is about people’s emotional responses to their experiences.
- Sensory questions: these questions are about what a respondent has seen, heard, tasted, smelled or touched.

Patton (as cited in Al-Suqri, 2008, p. 100) states that “keeping these types of questions in mind can be particularly helpful when it comes to planning the comprehensiveness of the interviews and ordering the questions in some sequence”. In this research, the researcher took into consideration all these types of questions when developing the interview questions in order to establish an interview guide.

#### ***4.2.2 Major Questions***

The first type of question asked concerned the respondents’ technology and internet background. Two questions were asked which were designed to explore the general internet background with reference to other uses of technologies for teaching and learning by academics and training supervisors at DIS in SQU. The second type of question asked concerned choosing and using online tools within a curriculum. This section was designed to explore the relationship of online tools to LIS curriculum being taught and the social context of Oman. Six questions were asked related to this topic (Appendix C). All of them sought to collect specific data about choosing and using online tools within a curriculum by LIS academics and then explore the ambiguity and uncertainty of ‘Web 2.0’. The third type of question concerned the motivations/factors, barriers/challenges of using and adopting online tools. These questions were designed to explore the main motivations as well as challenges of using online tools and/or other educational technologies in teaching (Appendix C).

The design of the interview was based on the literature review and preliminary investigation. The researcher used various information resources to locate material relevant to the study in order to design the interviews, taking into consideration the social context of Oman. The preliminary study took place on 12-18 November, 2011, at SQU, College of Arts and Social Sciences. Four academics from DIS were invited for face-to-face interviews, lasting approximately 25 to 30 minutes. The main purpose of the interviews was to assist in the finalisation of the effective design of the interview questions.

#### ***4.2.3 Face to Face Interview: Advantages and Disadvantages***

Face-to-face interviews were used to obtain the data from participants. The interviews were conducted with 15 academics including two training supervisors at DIS at SQU. Face-to-face interviews can enhance communication between the interviewer and interviewee and increase information collected. They also allowed the interviewee to seek clarification regarding some responses, as the interviewer was responding to the interviewees' understanding of the questions. In other words, face-to-face interviews allowed the researcher to adapt the questions as necessary, to clarify doubt and to ensure that the questions were properly understood. This was achieved by repeating and rephrasing the interview questions, if necessary.

The literature cites many advantages of using face-to-face interviews including obtaining high response rates and better quality data compared with telephone interviews by ensuring that questions are not accidentally skipped; "that respondents' answers are fully probed if necessary, and that answers are recorded correctly" (Jäckle, Roberts & Lynn, 2006, p. 2), "the answer of the interviewee is more spontaneous without an extended reflection" and "the interviewer can make more use of standardisation of the situation" (Opdenakker, 2006, p. 3-4). Other advantages of the face-to-face interviews are described by Hoyle, Harris and Judd (2002) when they state that these interviews allow the interviewer "to notice and correct the respondents' misunderstanding, to probe inadequate or vague responses and to answer questions and allay concerns is important in obtaining complete and meaningful responses" (p. 102). They add that the interviews give the interviewer the ability to control the context of the interviews and attain the highest response rate with a high quality of information. This type of interview is useful when the interviewees and interviewer are in close proximity. In this study, the interviews were possible due to the geographical distance between the interviewer and interviewees (from researcher's home to the interviewee is around 250 kilometres).

Despite these advantages of face to face interviews, there are several disadvantages as cited in literature. The main disadvantages are cost and time (Opdenakker, 2006; Hoyle et al., 2002) including the geographical limitations, time required and the costs of training interviewers. As mentioned, the researcher lives near the interviewees, so

the cost and time were manageable. After the interview was designed and the questions were determined, the researcher emailed three academics of DIS with interview questions for pre-testing. Pre-testing is critical for identifying interview and question problems. For example, it allowed the researcher to ensure that potential interviewees were able to understand the meaning of the questions and explore misinterpretations of terms or concepts. Based on the results from pre-testing, several minor changes were made to questions to produce more effective interviews.

#### ***4.2.4 Population and Sampling***

There are 17 academics and two training supervisors in DIS at SQU. Two of the academics are on scholarship, and they were excluded from the interview. The total number of invitations for interviews was 17. A total of 17 interviews were conducted, making the response rate 100%. The response rate is calculated by using the following equation:  $\text{Number of Complete Survey} / \text{Number of Participants Contacted} = \text{Response Rate}$ .  $17/17 * 100 = 100\%$

#### ***4.2.5 Data Collection***

The interviews took place in April-June 2012. Each of interviewees received a copy of the interview questions along with the notice of informed consent, and was also provided with instructions on how to respond and an estimate of the amount of time required for the interview (Appendix F). The interview questions were made available in both Arabic and English; however, the interviews were conducted in Arabic. Sixteen out of 17<sup>th</sup> academics signed consent forms and returned them to the researcher via email; however, all the interviewees agreed to participate in the study. After the consent forms were collected by the Head of DIS, scanned and sent back to the researcher, all participants were contacted by phone and thanked for accepting the invitation.

The researcher also reminded interviewees about the topic of the study and the main purposes of this research, and how their participation would add value to this research. They responded positively and expressed their willingness to participate in

the study. In addition, they expressed their willingness to provide as much information as the researcher needed. All interviewees were informed that they would be interviewed face-to-face. All interviewees agreed to the recording of the interview. The interviewees were given the opportunity to select their preferred time and place for the interview. All interviews took place in the interviewees' offices and at DIS laboratory, which was organised with assistance from DIS.

All of the interviews were conducted face-to-face in Arabic and all of them were recorded. Two main applications were used in recording the interviews:

- 1) SoundNote application via iPad: this application is designed for taking notes in meetings, lectures, and interviews. It helped the researcher to track what he typed and drew while recording audio. The researcher shared text and audio notes via email, and then transferred them directly to PC. In addition, audio notes were recorded in standard MP4 format.
- 2) iTalk Recorder application via iPhone: it records minutes of a meeting, lecture, or interview. The researcher emailed all recordings straight from iTalk.

The reason for using these two applications was to ensure the clarity of the interviews and that there would be a backup of the interview in case any problems arose during the transcription process. A test interview was conducted to ensure the quality and clarity of recording. This was arranged with one of the staff at DIS by conducting a mock interview. It proved that those two applications were suitable. The interview process is outlined below:

- General conversation and discussion between the researcher and the interviewee was carried out first in order to establish an atmosphere of trust. A summary of the reasons for the interview was provided without going into the body. This took around 5-10 minutes. All of the interviewees expressed their interest in the topic and their willingness to share their views.
- The interviews began with structured questions-checklists (Appendix D) designed to gain demographic and background information about interviewees, including their use of computers and the internet and the level of familiarity with some online tools. The interview began with a list of demographics questions that simply required the interviewer to tick a box to record the



interviewee's response. Demographic information included sex, age, position title, work experiences, and academic rank. Background information included their usage of the internet and LMSs. The second checklist was designed to address the awareness and familiarity of the interviewees with various online tools. It listed a number of applications using a scale of 1 to 4, where 1 is "Never heard about it"; 2 is "Heard about it"; 3 is "Have a view and have commented", and 4 is "Have an account". These applications included blogs (e.g., Google Blogger, WordPress or similar); wikis (e.g., Wikipedia or similar); online surveys (e.g., Google. Doc.); video sharing (e.g., YouTube or similar); SNSs (Facebook, MySpace or similar); image/photo sharing (e.g., Flickr or similar); slide/file sharing (e.g., Slideshare or similar); mashups (Google Maps or similar); podcast or similar; social bookmarking/folksonomy (e.g., Flickr, Delicious or similar); RSS/RSS Readers (e.g., Google Reader or similar), and webconferencing. (Appendix E).

- Semi-structured interview questions: interview body were categorised as follows: internet and technology background; choosing and using online tools within a curriculum; academics' motivations/desires in using online tools; and barriers and challenges to using and adopting online tools.

The interviews were subsequently transcribed into Microsoft Word. After the interviews were transcribed, the researcher sent them back to the interviewees to ensure the accuracy of the transcribed content. Most interviewees returned the transcripts without amendment or additional comments; however, three cases had minor revisions. All minor changes were made. All interviews were conducted in Arabic, so they were translated into English by three qualified translators. The translators were selected with the assistance of DIS. The translators requested three weeks for good translations. The researcher worked side by side with the translators to ensure that they understood the intended meaning of the interviewees in the context of the subject matter. The researcher then checked the appropriateness of the content and translation in relation to the research questions.

#### ***4.2.6 Data Analysis***

The data generated from the interviews were analysed using content analysis, a procedure designed to extract themes and typical responses from a large amount of textual data. Initially, the responses were examined and a preliminary set of themes were extracted based on the main research questions. The responses were then re-examined and coded according to the preliminary themes, and additional themes were added as necessary. Direct quotes from the interviews also were used in reporting the results (Al-Suqri, 2008). Data obtained from checklists (demography and background information) was entered manually using SurveyMonkey software (online survey tool for creating and publishing online surveys) for analysis and to produce charts and tables.

The study presented the key themes that emerged as a result of this content analysis as well as presenting data around each of the emerging themes from the perspective of the 17 interviewees. The study took into consideration the outline guide provided by Braun and Clarke (2006) through six phases of thematic analysis. The description of these processes is shown below:

- Familiarisation with the data: Transcribing data (if necessary), reading and rereading the data, noting initial ideas.
- Generating initial codes: Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
- Searching for themes: Collating codes into potential themes, gathering all data relevant to each potential theme.
- Reviewing themes: Checking the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic map of the analysis.
- Defining and naming themes: Ongoing analysis to refine the specifics of each theme, and the overall story emerging from the analysis; generating clear definitions and names for each theme.
- Producing the report: The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating the

analysis back to the research question and literature, producing a scholarly report of the analysis (p. 87).

In this research, the researcher followed all these stages of thematic analysis when framing themes and generating codes in order to extract key themes within a text.

### **4.3 Questionnaire/Online Survey**

#### ***4.3.1 Questionnaire Design***

Questionnaires are the most widely used method of quantitative data collection. For this research, questionnaires were chosen as a technique for obtaining quantitative data regarding the use and adoption of online tools by students at DIS. Many previous studies have used questionnaires in order to investigate students' attitudes towards the applications at the center of the study. Examples of these previous studies are Malhiwsky, 2010; Roblyer et al., 2010; Majhi & Maharana, 2011; Sandars & Schroter, 2011; Al kindi & Alhashmi, 2012.

Questionnaires are commonly used to look at the attitudes and/or opinions of a group of people relating to a particular issue and to gather information relating to individual's behavior. A number of authors and scholars in diverse fields including LIS have discussed the advantages and disadvantages of using questionnaires. A good questionnaire must "encourage frank answers or responses; help to reduce interviewer bias; make data relatively easy to collect and analyse; eradicate variation in the questioning process; and collect a large amount of data in a short period of time" (Powell as cited in Al-Suqri, 2008, p. 97).

Many researchers across diverse disciplines find the internet an effective tool for conducting their questionnaire survey in terms of cost and efficiency. Some advantages of using this technique are summarised by Wright (2005) as follows:

- Access to unique populations through providing access to groups or individuals who would be difficult to reach through other channels.
- Time saving for researchers in regards to ability to reach thousands of people and time needed for data collection.
- Money saved by moving to an electronic medium rather than a paper format.

Against these advantages, Wright points out two main disadvantages in regards to online survey as follows:

- Sampling issues: this includes the difficulty of knowing the characteristics of people in online communities, such as accurate demographic or characteristics information; the difficulty in some cases to accurately size an online population because some groups and organisations do not allow their email addresses to be listed; and unavailability of email addresses for some participants and researchers may have no authorisation to access email addresses.
- Access issues: for example, email invitations to participate in a survey might be rejected by participants or categorised as spam and then might be deleted or ignored by participants. In some cases, participants might complain about this type of unsolicited email.

All these disadvantages were not an issue in this current study. The DIS offers four academic programs: the Bachelor's degree in LIS; the Master's degree in LIS; the Higher Diploma in Medical Librarianship, and PhD in information studies. The researcher had access to all student email addresses in the four programs and the questionnaire was distributed easily with assistance of DIS. Additionally, some of these disadvantages were mentioned in regard to sampling issues (for example, the difficulty of knowing the characteristics of people in online communities, such as accurate demographic or characteristics information, and the difficulty in some cases to accurately size an online population) were not applicable in this study. Other disadvantages related to the questionnaire itself may include poor design, poor wording, and lack of background of subject (Brace, 2008). In order to ensure a well-designed questionnaire and to avoid these disadvantages, a number of stages were planned and developed to include the interviews (stage 1) in order to support refining the design of the online questionnaire. These stages are described in the next section.

#### ***4.3.2 Initial Investigation and Consideration***

The researcher followed several stages in order to design a reliable questionnaire. The questionnaire was developed based on the literature review, interviews (stage 1) and initial investigation.

- Literature Review: the researcher used various information resources to locate material relevant to the study in order to design the questionnaire. A careful review of the literature related to the use and adoption of online tools in the GCC, particularly in Oman, was conducted with respect to the social context of Oman, and provided a sound foundation upon which to support the design and construction of the questionnaire.
- Interviews with academics (stage 1): as indicated previously, the interviews helped the researcher refine the design of the online questionnaire as well as identify all critical issues that assisted the researcher to revise the scope or methods of the research. For example, it helped the researcher to identify the online tools or ‘Web 2.0’ applications most frequently used by academics and to gain an overview of how students react to these applications.
- Initial Investigation: a preliminary study took place on 12-18 November, 2011, at SQU, College of Arts and Social Sciences. With the assistance of DIS, thirty-eight students from DIS were invited to attend a class for general discussion in regard to the online tools. This discussion took approximately 45 to 80 minutes. The main purpose of this investigation was to explore participants’ familiarity, adoption and use of online tools such as Facebook and Twitter in their learning, and to assist with the effective design of questions.

#### ***4.3.3 Questionnaire Content***

The main purposes of the questionnaire were to:

- explore student perceptions of adopting the innovation of online tools, with reference to the social and cultural context of Oman
- examine the ways in which students utilised these technologies for learning within social structures and regulations
- explore gender differences in attitudes of university students towards online tools.
- determine the reasons why IS students in Oman use or do not use online tools in their learning, focusing on incentives for and barriers to adoption and innovation.

The questionnaire consisted of four major parts (Appendix A). The structure of the questions included multiple choice responses and five/seven point Likert-type scales. Participants were required to tick the appropriate *box* in response to each question. Building and structuring questions in this way enabled the researcher to code, analyse and interpret data efficiently and effectively. Data was analysed and stored in electronic format for easier manipulation using SurveyMonkey software.

The questionnaire was available in both Arabic and English, and participants were given an opportunity to select their preferred language. In addition, participants were given instructions on filling out the questionnaire with three options: online English version, English hardcopy version (filling in on paper) and Arabic hardcopy version (Appendix B). The questionnaire was sent to a professional translator for translation into Arabic. The decision for translating it was made because some students had difficulties understanding the English version based on the pre-testing of the questionnaire. After the translated draft of the questionnaire was completed, it was sent to an experienced professional translator. This was coordinated with the assistance of DIS. The average time taken to respond to the survey was reported to be 20 to 25 minutes.

#### ***4.3.4 Pilot Questionnaire and Online Design***

To ensure the survey was as clear as possible, it was tested prior to use, using two tests indicated by Brace (2008), for reliability and measure validity. Brace (2008) indicated that there are two tests for the questionnaire: reliability when the questionnaire provides a consistent distribution of responses from the same survey universe and validity, which “is whether or not it is measuring what we want it to measure” (p. 174). In order to test the reliability and validity of the questionnaire, several points were considered as follows:

- Comprehensiveness of the questionnaire in order to collect all the information needed to address the objectives of the study
- Determine that the questions are clear and understood by respondents
- Eliminate unnecessary questions
- Provide clear information and instructions

- Avoid ambiguous questions, leading questions, ‘double-barrelled’ questions, double negatives, jargon and colloquialisms, etc.

The questionnaire was sent to three academic staff at DIS in order to review question wording and survey timing. The questionnaire was pre-tested by first sending it to a small group of actual survey respondents who are LIS students (10 students) to ensure data was collected as expected. This required assistance from DIS. All comments and feedback reported by respondents to the pilot study were considered and necessary changes were made to the questionnaire.

After piloting the questionnaire, the data was encoded, managed and collated using SurveyMonkey. SurveyMonkey was selected because of multiple characteristics it provides to the researcher. Some of these characteristics are: design features (e.g., all languages supported, question logic, random assignment, etc.); collection features (send out survey via weblink, email, or Twitter, share survey on Facebook, send the survey using SurveyMonkey email manager and enhanced security); analysis features (text analysis, SPSS integration, filter and cross tabulate responses by custom criteria, download responses, create and download custom charts and share responses). These various features helped the researcher save time and effort in the use of online surveys, although as mentioned previously, the participants had the opportunity to choose their preferred form (print or online) and the language of the survey.

SPSS was used to calculate Cronbach's alpha which considers the most common measure of internal consistency (reliability), in order to measure questionnaire reliability. According to the reliability statistics table (Table 4.1) that provides the actual value for Cronbach's alpha, Cronbach's alpha is 0.91, which indicates a high level of internal consistency for questionnaire scale with this sample.

Table 4.1 Reliability Statistics table of Cronbach's alpha

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
<b>.911</b>	.923	125

### 4.3.5 Population and Sampling

The survey was conducted among all DIS students (n=173) at SQU in all four academic programs: the Bachelor's degree in LIS; the Master's degree in LIS; Higher Diploma in Medical Librarianship and PhD in information studies. The number of students joined to DIS is shown below:

Table 4.2 Number IS Students for Academic Year 2011/2012

	<b>F</b>	<b>M</b>	<b>Total</b>
Bachelor's degree	219	49	268
Master's degree	18	9	27
Higher Diploma in Medical Librarianship	0	0	0
PhD	2	0	2
Total	239	58	297

However, there are 123 students (F=111 and M=13) doing foundation year (Foundation program (FB) as explained in Chapter 2) and they were not enrolled officially in DIS, so they were excluded from the study. It can be noted that there are no students enrolled in Higher Diploma in Medical Librarianship in this year as reported in Table 4.2. The reason for this is that the Ministry of Health (the sponsor of this program) did not offer this program in 2012. The number of students enrolled in each program for academic year 2012/13 (Full 2012) is indicated below:

Table 4.3 Total Number of IS Students Who Enrolled in All Programs 2012

	<b>F</b>	<b>M</b>	<b>Total</b>
Bachelor's degree	108	36	144
Master's degree	18	9	27
Higher Diploma in Medical Librarianship	0	0	0
PhD	2	0	2
Total	128	45	173

### 4.3.6 Data Collection

The questionnaire was distributed in October 2012. The semester started on 15th of September 2012. It was elected to distribute the questionnaire at the beginning of October in the hope of attracting more responses while all students are still 'fresh'. The researcher required the assistance of DIS faculty to help distribute the questionnaire. The questionnaire was distributed in different ways:



- Online English version: with assistance from DIS academics the questionnaire post in the Moodle and the academics encouraged students to complete the questionnaire. Some IS faculty assisted the researcher in distributing the questionnaire by emailing their classes.
- English version in print: with assistance from DIS academics the questionnaire was distributed in the class for those who preferred the print version and then the researcher entered the data manually in the online version.
- Arabic version in print: with assistance from DIS academics the questionnaire was distributed in the class for those who preferred the print version and then the researcher entered the data manually in the online version.

The questionnaire was made available for five weeks. In this period, the researcher also attended some classes and coordinated with IS academics to introduce his research and encourage the students to fill out the questionnaire either electronically or in print. This included all students in three programs: the Bachelor’s degree in LIS; the Master’s degree in LIS and PhD in information studies. Table 4.4 indicates the number of participants who filled out the questionnaire using different versions and formats.

Table 4.4 Questionnaire Format

Number of respondents - Online version ( in English)	90
Number of respondents -English version in print	4
Number of respondents -Arabic version in print	57
Total	151
Total Started Survey	151
Total Finished Survey	139 (92.7%)
Discarded	4
Total of actual number ( valid)	147
Response rate	85%

#### ***4.3.7 Questionnaire Analysis***

The data was encoded, managed and collated using SurveyMonkey and then automatically downloaded into SPSS. Descriptive analysis included frequencies and percentages for the multiple responses, ranges, means, and standard deviations for the numeric variables. The findings of this technique were organised and presented in sequence under each question of the study. To determine whether there were

differences between the dependent variables and independent variables, chi-square test of independence, Spearman correlations tests was performed. The data of the study is mostly categorical. Hence, the use of Chi-square is acceptable and does not need an investigation of normality because Chi-square does not assume normality. In regard to the Spearman correlations tests, the type of relationships or the strength of a relationship is determined by the correlation as follows: .70-1.00 is strong, .30-.69 is moderate and .00-.29 is none (.00) to weak as identified by Jackson (2009).

#### **4.4 The Case Studies**

##### ***4.4.1 Design of the Case Studies***

A case study is particularly suited to addressing research questions that require a detailed understanding of such processes because of the rich, contextualised data that assists in the understanding of complex issues (Hartley, 2004). Furthermore, case studies are useful for evaluating situations that have no clear set of outcomes (Yin, 1994). The case study approach is applicable across many disciplines and is an appropriate methodology to use in library and information studies (Susan, 1997). The use of case studies is common in qualitative research, including research in LIS (e.g., Schamber, 2000; Foster, 2004). This was the final research stage, conducted after the initial survey results. The primary goals of the case study were to:

- Explore the actual use of online tools in the classroom; and
- explore student attitudes and the perceptions of learning using online tools in the classroom.

The case study outcomes were used to help the researcher assess the actual practice of online tools by academics as well as the response of students as learners. The outcomes of these case studies assisted the researcher in drawing a map of the actual practice of online tools by academics and the responses of students as learners. The findings of the case study supported the researcher in providing additional evidence in support of the survey findings. Susan (1997) points out that case studies can bring researchers to a better understanding of complex issues and can help to extend or add strength to what is already known through previous research. In this current study, conducting the case studies as a qualitative method supported the findings from the

interviews and survey in regard to the use of the online tools by DIS academics and students.

#### ***4.4.2 Procedures and Content of Case Studies***

The case study involved two academics interviewed in “Stage 1” who teach or have experience in teaching a course related to online tools and whose students are involved as well. The case study conducted divided in two cases:

##### **4.4.2.1 Case One: Interviewing an Academic and Small Group of Students**

This case study included teaching practices within internet applications and innovations. The case study aimed to explore the adoption and use of online tools within particular units that have already been taken by students. It included interviewing an academic regarding the implementation of various online tools in the classroom and interviewing the students to reflect on their experiences and attitudes towards these applications as encountered in their course. This was conducted in three steps:

- Semi-structured interview. This involved one academic. The interview included questions on unit description and syllabus; the type of online activities students work on in the classroom or for assignments, and students’ assessments of associated factors, including social considerations and teaching style. A form was designed to gather information from the interviewee. This form included the name of a technology or application used; learning objectives; advantages and disadvantages of using this application within the course; assignments and assessment, and difficulties and barriers. The central questions were:
  - 1) Please explain why you tended to use this application in teaching.
  - 2) How does this application align with the course? What are the learning outcomes you intended to achieve?
  - 3) Have your teaching style and communication manner changed with the use of this application?

- 4) What are the main activities of the students on this application? What kind of interactions do you have with them?
  - 5) What are the benefits and learning outcomes of using this application in teaching?
  - 6) Are there any difficulties that you faced while using the application in this course?
- Review and analysis of secondary data. This included the course materials, assignments and other activities. However, there were no available documents besides the course description and a list of students' projects. This will provide examples of the online practices within this course and could help establish how academics adopt online tools to support teaching.
  - Student group interview. In this step, the researcher gained the permission and assistance of the academic to select a sample group of students (10) who have completed the relevant course to obtain their feedback on the use of online tools in the classroom. Group interviews are useful in obtaining student opinions about a course or curriculum, and "provide a synergistic output; a "voice" of those who have participated as they intone the information which they share; and interactions among the participants". (Lederman, 1990, p. 120). The selection of the students for group discussion was based on a discussion between the researcher and the faculty member of the DIS. This interview included three main points to discuss: (1) learning in this course with this application: (2) willingness to use this application in the future; and (3) difficulties in learning with this application.

#### 4.4.2.2 Case Two: Online Class Observations and Interviews

This case study included observing teaching practices while using various online tools during a semester, observing the way academics and LIS students collaborate using these technologies. It also included observations of academic and student actualities using particular applications in addition to observing students reflecting on their experiences together with their attitudes to the applications used and in learning in LIS courses using these applications. The participating academic was asked to take notes and make observations regarding what he witnessed in the online

class. The researcher observed both the academic and the student. A form was designed for recording information. This observation period continued for 10 weeks and was coordinated with DIS. During this time, the researcher was checking online activities. As mentioned previously there is only one student enrolled in this online course. The student and academic were observed according to two criteria:

- Participation student: this included individual production and collectively generated content, including activities, contribution to collaborative resources and uploading of creative works and ideas, and the academic role within and contributions to student activities.
- Interaction and collaboration: included student use of communication devices for various activities for learning. Also for academic use of communication devices for various activities for teaching.

At the end of the semester two interviews took place; one with the participating academic and one with the student to gather feedback using this technology in teaching and learning respectively. This included the academic and the student reflecting on their experiences and attitudes toward the applications used in the course.

#### ***4.4.3 Population and Sampling***

The case study involved two academics interviewed in “Stage 1” who volunteered for the case study and who teach, or have experience in teaching, a course related to online tools and whose students were involved. The case study conducted followed two directions and the number of participants in each case is shown in the Table 4.5.

Table 4.5 Brief Description of Two Cases

<b>Case</b>	<b>Case 1: Interviewing participating academic and small group of students</b>	<b>Case 2: Online Class observations by researcher</b>
Participants this case	<ul style="list-style-type: none"> <li>▪ 10 students ( 5 Female and 5 Male)</li> <li>▪ Instructor</li> </ul>	<ul style="list-style-type: none"> <li>▪ 1 PhD student</li> <li>▪ Instructor</li> </ul>
Data collected technique	<ul style="list-style-type: none"> <li>▪ Interviews</li> </ul>	<ul style="list-style-type: none"> <li>▪ Observations and Interviews</li> </ul>
<b>Total</b>	11	2

#### 4.4.4 Data Collection

The case study took place from the end of September until mid-December (from 22-Sep-2012 to 18-Dec-2012). Table 4.6 outlines both stages of the case study.

Table 4.6 Description the Direction of Two Cases

The Case Studies	Case 1: Interviewing participating academic and small group of students	Case 2: Class online observations by researcher
Courses/Subjects	<ul style="list-style-type: none"> <li>▪ INFO 2210 Information Technology Course</li> <li>▪ INFO 2330 Subject Analysis Course</li> </ul>	<ul style="list-style-type: none"> <li>▪ ISIS 6120 Seminar in Information Behavior (PhD)</li> </ul>
Participants in this case	<ul style="list-style-type: none"> <li>▪ 42 students did both courses (10 student are selected as a sample for group interviewing)</li> <li>▪ Instructor</li> </ul>	<ul style="list-style-type: none"> <li>▪ 1 PhD student</li> <li>▪ Instructor</li> </ul>
Online tools/other applications	<ul style="list-style-type: none"> <li>▪ blogging</li> </ul>	<ul style="list-style-type: none"> <li>▪ LinkedIn, WhatsApp</li> </ul>

Data collection methods in case study one included interviews and review/analysis of secondary data. The interviews took place in September/October 2012. One academic and ten students in the DIS at SQU were invited to participate in separate interviews. All participants signed consent forms and returned them to the researcher. All participants were contacted by phone and thanked for accepting the invitation. The researcher also reminded participants about the topic of the study and the main purposes of this research, and how their participation would add value to the research. As a first step in the interview process, participants were reminded of the purpose of the study, research procedures and the main objectives, expected benefits to their country and GCC, their right to withdraw from the study at any time, and protection of their confidentiality. Participants responded positively and expressed their willingness to participate and to provide information as required for the study. All interviewees were informed that they would be interviewed face-to-face. All interviewees agreed to the recording of the interview. SoundNote and iTalk applications were used to record the interviews. The interviewees chose an appropriate time and place for the interview. The researcher followed the same procedure indicated in the interview stage. After the interview was conducted, all participants were invited to have lunch at the College of Art, provided by the researcher. The interview schedule is shown below (Table 4.7):

Table 4.7 Interview Schedule of Case Study One

	<b>Interviewee</b>	<b>Date</b>	<b>Time</b>	<b>Place of Interviewing</b>	<b>General Conversation</b>	<b>Interview Duration</b>
<b>1</b>	An academic	24 Sep 2012	10:00 AM	Interviewee office, College of Art, SQU, Oman	5 min	70 min
<b>2</b>	Group of students	1 OCT 2012	2:00 PM	Art Lecture at College of Art, SQU, Oman	10 min	120 min

Although interviews were the primary method of data collection in case one, the researcher also collected and reviewed documents in order to provide thorough descriptions of the case and to clarify or substantiate participants' statements. Review/analysis of secondary data included course materials: this included course description and outline; and assignments and other activities; including student works such as blogs created by them as a part of their coursework.

In case study two, the observation period took place in October/December 2012 and continued for 10 weeks. During this time, the researcher observed the student online in addition to checking online activities on LinkedIn between the student and academic and then identifying the main activities including participation, interaction and collaboration, and reflection and feedback. The researcher followed the same procedures regarding themes; a "print screen" was used for direct quotes from online activities. This was used in reporting the results. In addition, the researcher followed the same procedure regarding interviews.

#### ***4.4.5 Case Studies Analysis***

Content analysis was used to extract themes and typical responses from textual data from respondents. Data analysis included the researcher reviewing the multiple forms of data collected including two case studies, focus group interviews, and class observation. The researcher summarised the themes that emerged from student responses. The transcribed focus group interviews were coded to thematically organise the students' responses. The coded statements were used to identify themes that emerged in student and academic responses. The researcher followed the same procedures in the interview stage one for both cases.

## Chapter 5 Interview Findings

### 5.1 Introduction

Qualitative data was collected using face-to-face interviews. This data collection is intended to provide more in-depth information about the adoption and use of online tools commonly known as 'Web 2.0' in the teaching practices of the DIS at SQU. The data will also identify personal and professional uses of online tools. The chapter describes the context of the internet use by DIS academics in Oman with reference to other uses of technologies (LMS) for teaching and learning, the relationship of online tools to curriculum being taught, and the social context of Oman.

The primary findings are provided and the chapter divided in four main sections as follows: internet and educational technologies, choosing and using online tools within a curriculum, motivations/incentives for adopting the use of online tools and barriers/challenges in utilising internet use. The following section describes the data collection and the characteristics of the participants.

### 5.2 Demographic Information

All seventeen academic staff from DIS were interviewed. The characteristics of the interviewees are shown in Table 5.1. Of these interviewees, twelve were male and five were female; one interviewee was a professor, one was associate professor, eleven were assistant professors, two were lecturers, and two were training supervisors.

Most of the participants (n=15) have experience using the internet and LMSs however, two had never used LMS while they were teaching. All the participants (n=17) had access to the internet from home, and all of them used their laptops to access the internet from their offices. Of the participants (n=11) used mobile phone and personal computer to access the internet. Most of the participants (n=15) accessed the internet several times per day.



Table 5.1 Demographic Information of the Participants

P. No	Gender	Age	Teaching experience	Academic rank	Degree earned	Last degree earned/country	Last degree earned/date
A 1	M	49	15	Assi-Prof	PhD	UK	2001
A 2	M	37	15	Assi-Prof	PhD	USA	2007
A 3	M	58	21	Professor	PhD	USA	1978
A 4	F	61	14	Asso-Prof	PhD	USA	1983
A 5	M	36	14	Lecturer	M. S	Oman	2008
A 6	M	73	22	Assi-Prof	PhD	Egypt	1988
A 7	M	37	15	Assi-Prof	PhD	Australia	2007
A 8	M	32	9	Assi-Prof	PhD	UK	2012
A 9	F	31	8	Training supervisor	B. S	Oman	2003
A 10	F	46	10	Assi-Prof	PhD	Egypt	1997
A 11	M	45	8	Assi-Prof	PhD	UK	2010
A 12	M	61	10	Assi-Prof	PhD	Iraq	1995
A 13	F	40	10	Assi-Prof	PhD	UK	2006
A 14	M	32	3	Lecturer	M. S	Australia	2004
A 15	M	62	16	Assi-Prof	PhD	France	1988
A 16	M	31	5	Training supervisor	M. S	Oman	2011
A 17	F	45	7	Assi-Prof	PhD	Egypt	1999

### 5.3 Internet and Educational Technologies

This section reports the participants' attitudes toward using the internet and educational technologies. It also identifies DIS academics' context for internet use, including reference to the technology they use for teaching and learning and the relationship between the internet and the curriculum being taught.

#### 5.3.1 General Depiction of Internet Use

##### 5.3.1.1 Personal Use

Respondents were asked to describe their personal uses of the internet. The participants reported that they use the internet to contact individuals in different societies, to share information and knowledge, to check and send emails and to find and access information. Interviewees' personal internet activities can be classified in four categories: information finding and gathering (searching and browsing the internet); communication, including email; online shopping or online transactions, and services; and daily updates. An example of the personal use of one of these interviewees is as follows:

It includes continuously examining email and searching for private things that I encounter in my daily life. If I need specific information with regard to family and society issues, I use the internet, and I get the benefit of available information, especially from the specialised websites in the fields in which I search. (A 16: 1)

The internet is widely used for online shopping or transactions and for services, such as e-banking, e-buying, and e-paying. One of the interviewees stated:

Regarding my use of the internet, it is considered a part of my daily life. I go to the internet to find any case related to public issues and to acquire general knowledge, education, awareness, professional development, and marketing. I use the internet to employ all its services or to see the recommendations and comments of people who purchased items, such as cars and so on, before I make my final decision to buy them or not. I do the same when I plan to travel abroad. (A 7: 2)

All the interviewees used the internet as a means of communication, using email or other websites, as an entertainment tool, and to track news. An example of these uses is provided below:

I use the internet for personal purposes, for communication through e-mails, and for listening to music on YouTube. (A 13: 1)

#### 5.3.1.2 Development of Research and Professional Use

The internet is also considered an indispensable tool for research. It is used to access online journals whether open access journals or those to which a university subscribes. The internet is an essential source of information for courses and other purposes, such as retrieving articles and scientific papers, becoming acquainted with people as sources of information in the same specialisation, or using search engines, meta search engines, and Google to find new sources for information. Three main professional uses were identified by the interviewees: scholarly communication, scientific research, and professional development. All the interviewees use the

internet for sharing and publishing their research findings, making them available to the wider academic community through open source or subscription databases and journals. One interviewee mentioned:

Of course, scientific or scholarly communication has become available through the internet, and it provides online access to the library and various sources of information, and even digital libraries exist on the internet with many their different resources, such as online books and manuscripts. In addition, the internet provides access to open source journals and the available information through electronic newspapers...it provides a greater opportunity for scientific research. (A 17: 3)

While other respondents are likely to use the internet to access various information sources they need to conduct scientific research, including both subscription and open-access journals.

I use the internet to keep pace with new introductions in the specialisation; and even to create a specific topic for research and write down all of its details...For instance, in the field of the scientific research, without question, the first place where the research starts is the internet whether I access different databases or use search engines that assist me in accessing information sources for my topic. (A 2: 3)

The internet was used as a public access channel for various information sources. Another interviewee reported:

The internet is also considered a very important tool in the process of conducting research through access to articles and books that are available on a particular subject. We can get full texts, international reports, and academic thesis in the full text, and other information sources. (A 3: 2)

Another interviewee focused more on using the internet for professional development. He reported that the internet provides easy access to a variety of resources as it provides authentic sources for professional development for academia

and staff through different websites that incorporate communication, valuable information, and relevant and up-to-date professional resources. This interviewee explained some of his professional practices on the internet as follows:

I largely use the internet to identify programs with practical training available in libraries and information centres... we can access articles that we need from the electronic periodicals in which the university subscribes. We also skim through specialised websites, such as the Library of King Fahad, and Al Yaseer forums. This is all related to my professional use. (A 16: 2)

#### 5.3.1.3 Educational Use

The nature of LIS courses requires access to the internet. Respondents were asked to identify their educational activities, through using the internet. The respondents use the internet widely when they teach information studies courses. Therefore, information studies education and the internet are two things that cannot be separated. Interviewees reported use of the internet for delivering subject content, building integral parts of the course, supporting course content, and facilitating communication. Emailing and searching are some of the top activities of academics on the internet.

Most of the interviewees use the internet to deliver course content and provide students with access to the information required for their studies (e.g., assignments, research, etc.). The interviewees deliver online course content in a variety of ways, including via text, video, audio, forums, chat rooms, and others. One interviewee reported:

It is the first tool used to access information, to get benefit of it, and to convey it to the students. This is done by reinforcing the content of the course itself, reinforcing the subjects being taught, searching for modern and innovative methods to design the students' assignments, and supporting the course. Without question, the internet has become the first source of information and is accessed through free access or by entering the databases that are provided by the libraries and by various information resources. (A 7: 1-2)

Other respondents reported they consider the internet to be the main source used to support course content because some course syllabi and content are available through the internet on many universities sites and personal academic sites. It creates a form of collaboration. One interviewee reported:

It is observed that some subjects are available on the internet from people who teach the same subject or teach similar courses, which can create advantages; some websites provide professors with the applications necessary for their courses, and it is possible to utilise them in teaching. We also use the internet to provide video clips (e.g., YouTube) that assist us with teaching or in academic development. (A 13: 2)

Most LIS courses, such as courses in IT, information marketing, information networks, and digital libraries course, depend on the internet. The internet is an integrated part of teaching for students majoring in information studies. Most of the interviewees used the internet in different ways as an integral component of their courses. Internet uses included searching, browsing, and using different applications, search engines, online dictionaries, databases, and software in digital libraries. One interviewee noted:

It is part of the teaching practice because of the huge number of information sources. We show some of the sources to students because it is an integrated part of teaching, especially in information studies major students who should log in to databases. For example, in the Information Literacy Course, many students don't have enough knowledge about libraries and research, so we search databases to train students how to search and to teach them the available research methods and types of sources in the database. The internet is a part of the course, and some courses, like Classification, are conducted primarily through the electronic editions available on the Web. (A 11: 2)

Another interviewee stated that the internet has become a core element of teaching, not a supplementary tool. He reported:

At the present time, we cannot consider the internet a supplementary tool. The network is important in teaching because we cannot convince the students through traditional methods. However, it is the new thing to use videos, for instance, or the websites that are related to courses on scientific subjects, so the internet has become essential in teaching. (A 13: 2)

The internet was also reported to facilitate communication between professors and students with most interviewees using the internet for this purpose (email is widely used as a form of communication). One interviewee reported:

I use it as a tool of communication, such as sending and receiving personal email messages, and for academic usage, such as sending emails to students, the faculty, and to other researchers in the same field. In addition, the internet is an important source for information, and I use it in my research and studies. (A 12: 2)

#### 5.3.1.4 Perception of the Internet

All the respondents believed that the internet is a necessary tool in teaching and learning, and a number noted that education without the internet would be difficult and less effective. One interviewee reported that the internet plays an important role in facilitating and activating the educational process. Some professors claimed that the teaching process consists of the teacher, the student, and the curriculum. However, it can be said that the internet is a new, fourth factor of the teaching process.

I think that the internet has become a part of a human's life... For instance, simple things, such as the current use of an application like the WhatsApp, need an Internet connection... You can also imagine that if the internet is down, the students can't study or do their assignments. It might be the most important element in teaching...With regards to teaching process, I focus largely on the internet to activate its uses in teaching. I do this according to a very important philosophy which is that the internet plays an important role in facilitating and activating the educational process. (A 2: 2)

Another interviewee added that the internet is part of LIS curriculum when he reported:

Without the internet, we cannot give lectures, especially in some courses, such as Bibliometrics for post-graduation students. This course analyses intellectual production. Thus, we cannot work without Scopus or Journal Citation Reports (JCR). (A 12: 3)

### ***5.3.2 Educational Technologies (LMS)***

E-learning and technology-supported learning are adopted by interviewees to support their courses. Interviewees used different forms of electronically supported learning and teaching. Most interviewees currently use LMS, or had experience with its use. There were only two interviewees who had never used Moodle or other LMSs. Respondents were asked about LMS such as Moodle for use in supporting teaching and their perception of the role played by them and other LMSs.

#### **5.3.2.1 The Rising Popularity of Moodle in Teaching**

Moodle was widely used by interviewees in teaching and course delivery, although they were not directed by university to use Moodle. Most course materials and assignments were available through Moodle. Although most of the interviewees used Moodle, its use differed from one interviewee to another. One interviewee stated:

I use Moodle to display materials and administer tests, but I do not prefer to administer final exams through Moodle. All the students' assignments and work is done through Moodle, and I give students feedback about them. One of the good things is that Moodle provides the work and assignments of all students, so they can share and look at them. (A 10: 2)

Another interviewee used Moodle more for outline discussions and encouraged students to post topics for discussion.

To me, the most important thing is the discussion about issues the students ask about on Moodle or the topics that we put on Moodle for the students to discuss. We also use Moodle for creating assignments, administering the short exams, and completing practical assignments. (A 16: 2)

Most of these interviewees use Moodle for uploading course/subject materials, posting external links and resources, communicating among/with students, posting discussions, and providing students with exams/quizzes. One interviewee explained his experience with Moodle:

I use WebCT and Moodle to teach five to six courses in my specialisation, and their use varies. Through them, I use everything related to the course, and I utilise them to provide lectures, communicate with the students, and create a forum for discussion. This forum allows the students to discuss amongst themselves and with the professors. (A 2: 4)

#### 5.3.2.2 Limitation of Using Moodle

Most of the respondents reported that they used the basic and central tools that meet their courses' objectives and goals. For example, one interviewee stated that he used the basic tools while another pointed out that his use was limited to those applications that helped him achieve his course goals.

I do not have time to go deep into the rest of the available applications on Moodle, and my use is limited to downloading and uploading files and updating the materials for students. (A 3: 2)

I do not use all the tools available in Moodle. I just use the applications that help me to achieve the course goals. (A 5: 2)

Several interviewees identified some factors that influence their use of Moodle. These include the sluggishness of the internet, insufficient time to learn, and lack of awareness. One interviewee mentioned:



I have not used Moodle in designing the examinations because of the bugs, the sluggishness of the internet, and because there are an insufficient number of computer labs. So, I use Moodle to provide content and to upload files and PowerPoint slides ... I need to train on and use new technologies, including chat, which requires time to learn. This is because I teach large groups of students, and the follow-up through Moodle is difficult and takes time. (A 7: 3)

Some interviewees identified several issues from the increasing use of Moodle. One interviewee explained his experience:

Moodle has largely become more important, but with regard to our environment, I think that Moodle is not of tremendous importance because of the existence of traditional methods in teaching...the university has its own centre, and from time to time, we receive advertisements regarding non-compulsory electronic courses, and the professors have the choice of whether to join these courses... I consider them important, but what I have noticed is that these applications are not important in the surrounding environment, especially in colleges of art and social sciences. Except young users who consider these applications to be of the utmost importance, the digital emigrants do not consider them to be so... (A 7: 3)

Even the use of Moodle needs to be controlled by academics due to the fact that irrelevant materials can be published by students:

One of our colleagues has stopped using Moodle because of one of the students spread immoral content through it and the academics couldn't control it. There should be control from administrators to facilitate the management of the content. (A 13: 10)

#### 5.3.2.3 Academics' Perception of Moodle

A majority of the respondents reported that Moodle had many advantages for teaching staff with regard to e-learning where compared to other LMSs.

Moodle is considered better than the WebCT because of its tools and properties. It is flexible in a way that helps the lecturer control the groups and the grades and prepare examinations...I also use Moodle to communicate with the students. (A 12: 3)

Moodle has simplified lots of functions and assignments and simplified the teaching practice in the academic environment. It has a lot of tools. Students have overcome their shyness, and students who do not want to participate in class are more active now...the method of delivering lectures is now different, which encourage students to learn and benefit. (A 10: 2)

Regarding the using of Moodle in term of usefulness and ease of use, most interviewees who use Moodle reported that it is quite straightforward.

Moodle is too easy and not complicated. There is no need for workshops to learn it, and I have read the guide available on the website and received some help from my colleagues. There are a lot of tools, but I have not used them all because I do not need them. However, it is easy to download and display all my materials. (A 11: 3)

#### 5.3.2.4 Academics Views about Student Participation and Interaction

The academic respondents were asked about their experiences with teaching students through Moodle, including whether they believed the students used Moodle and had adopted this technology. The responses indicate the academics believed students used this technology. Two of the interviewees reported:

In the beginning of 2007 and 2008, the students did not accept this technology very well because of their nature and interests in new technology or internet applications. However, the new generation interacts with it a lot because almost every student now has a laptop and smartphone that connect to the internet easily. Students now finish their assignments and discuss in the forums more than before. (A 9: 2)

At this university, the students interact very well, and it is a fact that the students love technology; they try to accept its use and learn it well. We cannot provide a general opinion on that, but this is what I have observed in this department. (A 17: 4)

On the other hand, other interviewees claimed that the students had less interaction with their colleagues and do not accept this technology.

I think that the students are not aware of this technology... the students do not take it seriously, and they imitate their colleagues. I have noticed and observed this throughout the last five years. (A 13: 4)

While we used these applications, I was teaching a course, and the interactions between the students were very simple. The reason behind this was the applications themselves; they were new, and the students had not acquired enough knowledge to deal with them. (A 2: 4)

Two interviewees indicated that the students interact with and participate in Moodle only when there is some assessment for these activities.

Some students show little participation, but when there is an assessment on that, students have to be active and discuss. However, there is less participation than expected. (A 11: 3)

In fact, all the students participated in discussions because I assess students in regards to this, and this pushes them to participate. (A 5: 2)

#### **5.4 Choosing and Using Online Tools within a Curriculum**

Several questions concerned the adoption of online tools in teaching, as well as in other fields, and also with regard to respondents' attitudes towards 'Web 2.0'. These were followed by sub-questions according to the interviewees' experiences and knowledge of these tools and applications.

### 5.4.1 Level of Academics Knowledge of Online Tools

The experience of the interviewees regarding online tools, including ‘Web 2.0’, are categorised into four levels: those who have no idea about anything on the internet applications list in the table below (Table 5.2) (“Never heard about it”); those who have heard about one or more items on the list, but haven’t checked what they are; those who have given their view by posting and reading comments online (“Have a view and have commented”); and those who have an account for different purposes (“Have an account”), and are therefore assumed to level a high degree of familiarity. Table 5.2 indicates the level of interviewees’ self-reported knowledge regarding internet applications or/and online tools. Almost all the interviewees were familiar with various online tools, such as Facebook, YouTube and blogs. It is encouraging to note that all the 17 respondents were aware of social-networking tools and 16 of them had an account with one or more of them. It is also clear from the table that a majority of academics are not familiar with podcasts and web-conferencing. For example, seven out of 17 had never heard about podcasts and nine had heard about them but had not developed a view or opened an account.

Table 5.2 Academics’ Knowledge of Various Online Tools

Online Tools	Never heard about it	Know about it, but don’t do it	Have a view and have commented	Have an account	Total
1. Blogs (e.g., Google blogger, WordPress or similar)	(0)	(3)	(9)	(5)	17
2. Wikis (e.g., Wikipedia or similar)	(0)	(4)	(12)	(1)	17
3. Online surveys (e.g., Google. Docs)	(0)	(5)	(4)	(8)	17
4. Video sharing (e.g., YouTube or similar.)	(0)	(2)	(11)	(4)	17
5. Social networking sites (Facebook, MySpace, etc.)	(0)	(1)	(0)	(16)	17
6. Image/photos sharing (e.g., Flickr or similar)	(1)	(8)	(7)	(1)	17
7. Slide/file sharing (e.g., SlideShare or similar)	(3)	(5)	(4)	(5)	17
8. Mashups (e.g., Google Maps or similar)	(0)	(4)	(9)	(4)	17
9. Podcast or similar	(7)	(9)	(1)	(0)	17
10. Social bookmarking (e.g., Flickr, delicious or similar)	(5)	(6)	(5)	(1)	17
11. RSS (RSS Readers (e.g., Google reader or similar)	(2)	(2)	(6)	(7)	17
12. Webconferencing (e.g., using Webcam with software)	(2)	(9)	(5)	(1)	17

In other words, they are relatively ignorant about that tools and applications (podcasts and web-conferencing). All female academics have heard about slide/file sharing (e.g., slideshare), social bookmarking, RSS and web conferencing compared with three male academics who never heard about slide/file sharing, five about social bookmarking, and only two about RSS as well as web conferencing.

Respondents were asked to explain how they used these applications and tools in personal and professional contexts, and especially for teaching purposes, including the use of these applications in supplementing/supporting/replacing existing courses, communication and collaboration activities, and the value of these applications for students. Sub-questions were asked to explore in detail all issues related to interviewees' uses of the applications.

#### ***5.4.2 Using Online Tools in Personal Uses- Social Communication***

Most of the interviewees reported that they used online tools, predominantly Facebook, as a social-communications channel with friends and relatives and even with people in institutions and organisations, however, some of them limited their uses to this activity. In general, the preferred application in this category was Facebook:

On Facebook, I have lots of friends who I scarcely know and I receive invitations from lots of people. I also get news, especially from my colleagues. It is really a means to find people. (A 3: 6)

I have used Facebook as a medium of communication between different people around the world. It is also a communication centre that helps us to find out what is going on with our colleagues around the world. (A 7: 4)

I have used Facebook for social communication...regarding my participation in Facebook, it is primarily for social communication and for communication with colleagues at work, whether with colleagues within the university or outside the country, and with people who are studying abroad. With regard to the academic side, it is somewhat limited. (A 16: 5)

### ***5.4.3 Online Tools in Professional Uses and Research, and the Networked Self***

Some interviewees reported that they used online tools to communicate with their colleagues, who are specialists, or with interested people and researchers in the same discipline. They also use the applications to continue professional development and to research the services that are currently in existence, using different applications of online tools, such as Google Docs and Facebook.

I also use Facebook continuously to communicate with my colleagues, who are specialists, or with interested people in the same specialisation. Moreover, I use it for social communication to find out news of my friends from time to time. (A 16: 3, Male)

In my professional life, I usually contact researchers through social networks, such as Facebook and LinkedIn, to read conference news and work papers, and this is beneficial. (A 11: 2, Male)

Another interviewee stated that he used an “Academia.edu” to follow the latest research in his field and to communicate with other professionals in his field.

I have also used the Academia.edu to follow researchers and publications within the scope of my interest. For example, there are usually a lot of questions about the published research from Africa and elsewhere. Therefore, I keep pace with the latest publications in my field and in my interests. (A 1: 2, Male)

The use of these applications was not limited to Facebook, with interviewees mentioning that they also use blogs, LinkedIn, Google Docs and Academia.edu. Two of these interviewees reported that:

Regarding the blogs, yes, they represent my use in terms of accessing some private blogs and, if I find topics related to my field or any subject within my interest, I communicate with those people... Regarding the LinkedIn

application, yes, I have used it to communicate with specialists and researchers. However, I do not use Facebook or Twitter at all. (A 3: 4, Male)

I have used Google. Docs as one of the applications to design online questionnaires. I have also encouraged students to use YouTube to download videos and show them in class as a part of the course. (A 5: 3, Male)

Some interviewees explained that their use of these applications tended to be in professional and teaching contexts, rather than a personal context. One of these interviewees explained this as follows:

I use these applications in my job more than personally. For example, I use YouTube to watch cultural and entertainment videos not more than 5% of the time, compared to 95% for downloading videos for professional use, and that goes for Google Docs as well. However, I use Facebook not just for social relations, but also for seeking knowledge and advice from others. (A 5: 4, Male)

Another interviewee explained his experience in using various online tools in his profession as follows:

I use internet in terms of exchange of views in scientific research, and identifying the achievements of others, whether at the university or elsewhere, and taking advantage of research that is prepared in various institutions during the update, and communication with different people...It is also a means to exchange information and research findings between specialists in the same field, to exchange experiences and to find the suitable person for a given assignment. So, blogs and social networks facilitate this process significantly, especially in the specialisation of Information Studies. (A 1: 5, Male)

On the other hand, some interviewees use email for purpose of research and communication rather than these tools and applications such as Facebook as some of them do not trust these tools.

As anyone can see, Facebook is more open to the public and there is no privacy...I have, in fact, two accounts on Facebook, but I do not use them. Regarding the scientific research, I usually communicate through e-mails with other researchers and colleagues. (A 12: 6, Male)

Facebook is a general *newspaper* for all; there is no limit on visits, no limit on time spent on the site, it is free of charge, there is no censorship and the door is open for all... Facebook is for chatting and conversation, with a mix of ideas, some of which may not be related to your topic. It is like a group of people who are sitting down for a tea party. (A 4: 6, Female)

Regarding Facebook, it contains excellent tools to communicate with students, such as Moodle, which also allows students to download the course subjects. However, we can't cater for scientific research and subjects through Facebook. (A 3: 3, Male)

These results also suggest that there are differences in the attitude towards use of online tools in scholarly communication and collaboration between females and males. Male academics are more likely to use online tools in scholarly communication and collaboration. Most of the interviewees who mentioned that they use these applications are males. However, with this gender related data, it should be noted that there are only five females in the population, therefore, this result does not fully reflect gender differences in the level of the use of these online tools, and therefore cannot be generalised to other LISDs in the GCC.

#### ***5.4.4 Academics' Attitude towards Using Online Tools in Education***

Interviewees were asked several questions regarding their use of online tools in teaching. Sub-questions were also asked when they necessary.

##### **5.4.4.1 Discussion Platform and Resources Sharing**

It seems that some academics have adopted new ideas regarding online tools, resulting in changes in key aspects of the established LIS curricula. It is worth noting



in this context that several interviewees considered the use of these applications to be an integral part of the process of teaching an LIS curriculum in terms of communication, finding information and sharing resources. Most of the respondents reported the use of different applications to support the course content based on the nature of the course. Some of these interviewees used Facebook, blogs and Twitter, while others used YouTube. One of these interviewees reported his experience using blogs within a particular course as follows:

...we teach our students how to blog. The students follow the steps in order to make their own blogs, expressing free choice of subject. The students are asked to provide all the information needed to help them make clear and readable content by adding texts, links, mixing images and videos and all sorts of useful things. This information will make their blogs more efficient and helpful... In the fourth semester, in teaching the Subject Analysis course, here we invest or use the blogs that have been developed in the previous semester...At this stage, the students can use the blogs in other functions and for sharing information and resources with others. (A 12: 3)

Another interviewee adopted the Academia.edu and LinkedIn applications in teaching. He pointed out that these applications are now used as an integral part of the course, for discussion and sharing resources:

I have used the LinkedIn and Academia.edu efficiently in teaching, not as supplements to the teaching, but as the main parts in teaching, whether for Bachelor's courses or for Master's courses. YouTube was also one of these supplementing and supporting applications. In addition, we have used Flickr and Facebook a lot to communicate with the students, in order to discuss some topics related to the course and sharing resources. Regarding the Academia.edu and LinkedIn applications, they have been the main parts of teaching... My use of these two applications included different parts of the course, starting with discussion, sharing resources and ending with questions. (A 2: 4-5)

Another interviewee used the LibraryThing application in a taught course in order to help students understand the course thoroughly. She explained her experience as follows:

I adopted the LibraryThing application for some courses. LibraryThing helps find specialist information, sharing resources and storing and sharing book. The aspects of this application that impressed me were the classification system and the advanced services that help the specialist and the students after graduation, especially if they need to discover or find a classification on a certain subject and to get classified numbers... (A 13: 6)

However, some academics have limited their use of applications to social communication, rather than focus on the educational benefits, or they limit use to sharing resources and asking questions. For example, one interviewee reported the following:

It might be limited to the sharing of some resources or asking questions about some matters related to the specialisation, such as seminars, conferences, and workshops. (A 16: 5)

However, another interviewee believes that there is nothing interesting with these applications, stating that:

I have an account in Facebook but it doesn't have anything that encourages me to use it. Even adding users is not clear for me because there isn't enough information about them.

It seems that some academics use these tools in teaching but for little more than communicating with students and finding information and sharing resources, in which case the actual use provides few benefits not available from email.

#### 5.4.4.2 An Attitude More Than Technological Proficiency

Several respondents reported the use of different applications in teaching practice is associated with respondents' attitudes. In other words, and as noted in Chapter three that the tools cannot work innovatively by themselves; it is the academics' ability, attitude and beliefs with respect to these tools in teaching that makes the difference.

...You can also find social media websites in your specialisation that might help students after graduation. However, in the end, they have nothing to do with the specialisation. I mean by this...it is a technology you can use for the specialisation to the other students. (A 13: 6-7)

Another interviewee explained that the use of these applications in designing the course and supporting the content is the academics' ability, attitude and beliefs regarding the importance of these tools in this respect:

These applications facilitate designing the courses and downloading files and materials for the student. Despite the relationship between these applications and the nature of the courses in the field of library and information sciences such as using LibraryThing in classification course, but they can be adapted and utilised by others disciplines and within different curriculums from history and geographical studies to science studies. Well, it depends to the person himself and his attitude towards these applications. (A 2: 3)

#### 5.4.4.3 Internal and External Collaborative Work

The majority of interviewees agreed that online tools characterised as 'Web 2.0' offer new opportunities for collaboration. One interviewee pointed out the following:

We have for the past three years conducted workshops to introduce the Web 2.0 applications. Shortly after the appearance of these applications, we wanted to let the community of the university, including the academics and post-graduation students at the college of Arts, know about the applications and uses of Web 2.0, Including Blogger and RSS, YouTube and others. We used them

interactively with our colleagues in the process of communication; therefore, they were able to implement the workshop in a better way. As a result, use of Web 2.0 became intensive and sophisticated within four weeks. (A 16: 4)

This collaboration includes exchanging teaching materials between the academics and benefitting from the experiences of others in the discipline. For example, one interviewee stated that:

...with regard to the influence of these technologies on the academic environment, they provide collaboration between academics in terms of exchanging teaching materials benefitting from the experiences of others in this field, and circulating drafts and PowerPoint presentations with colleagues, especially those who have taught a particular subject. (A 14: 5)

However, this collaboration should be directed and shaped by academics in order to make it more effective:

Here, we refer to the points we have mentioned previously, in that the academic is directing the students to use these applications; for example, the students who share an assignment or a certain project within the course. Through the completion of this course, updating or making a simplified report of what has been accomplished in the last period, the academic and students can follow up this project through this website or through these applications. Among the academics themselves, with regard to the development of curricula, research collaboration, and sharing some of the articles of the same interest, I think that the process of collaboration is very wide. (A 16: 6)

The use of various online tools, including Facebook, is considered a collaborative work platform. One example was provided by an interviewee:

During my use of the LinkedIn application, when I also was teaching that course, I was discussing the teaching of this subject with my colleagues outside Oman. We were discussing all the related parts of this course. It is really one of the important advantages that you come across through these applications: lots

of academics who you haven't met or do not know well enter into discussion with you. These applications help in discussing the methods of teaching these courses. We also discuss the subject that might be used in teaching and dealing with students in general, as well as how to activate these subjects through these applications. This is very important. You are making a website or an account for your course to discuss with your students and also to communicate with other groups, sometimes from famous universities outside Oman, who have the same concerns. (A 2: 8)

#### 5.4.4.4 Communication and Collaborative Learning

Online tools offer a number of features and applications to support communication and collaboration between students within a course, which are essential for them in order to become a successful learner. This can be found through using applications such as Facebook and LinkedIn. Most interviewees agreed that these applications contribute to enhancing communication and collaborative activities. For example, one interviewee reported that:

In simple cases, when I send the lectures to the students, all the students' e-mails are shown and this helps the students to communicate and collaborate with each other easily. Most of the students have accounts on Facebook and I receive invitations from some students...these applications reinforce the communication in teaching between the teacher and the student. In the field of scientific research, they also reinforce the communication between the different researchers. In the specialisation of source management, they reinforce the communication between libraries as well. All of these examples are forms of communication. (A 3: 7)

Collaborative learning was achieved through working to share, listen and integrate each other's ideas, or simply through sharing ideas regarding debates or the creation of supportive-learning communities. According to these activities, it can be noted how these technologies affect collaborative learning. Two interviewees provided examples of this:

I think these applications have an effect in two ways. It assisted in studying the information retrieval from blogs, which allowed students to read deeply in specific topics. In addition, these applications assisted in exchanging ideas, news and academic information. As a tool, it could help the student and the instructor, but it depends on its use. (A 5: 4)

These applications have facilitated communication and you rarely find barriers between the students. The barrier between the students and the academics has also been removed. (A 15: 3)

As A 15 noted, these applications also have facilitated communication and collaboration between the students and the academics. Another interviewee reported that:

They really facilitate the communication between the students and the academics. With regard to the collaboration activities, the students can express their ideas, which might be developed in the future, especially those students who have little self-confidence and who are on probation, they want to express what is in their hearts. However, they cannot do that face to face. Through these applications, they feel free to express whatever they want. (A 13: 10)

#### 5.4.4.5 Changing Nature of Communication in Society

Online tools have changed the nature and timeliness of communication, whether this communication is for personal or learning use. The internet and its applications for communication interfaces such as Facebook and blogs are having a profound effect on the way that students are communicating in society. All boundaries are removed between students when using these applications. For example, one interviewee was asked the following: Do you think online tools or so-called 'Web 2.0' has influenced communication and collaboration activities? He replied as follows:

Yes, and it can be noticed throughout society, a few males communicate with females face to face, while the existence of these technologies has lessened embarrassment and made this type of communication more effective. So, it

provides an opportunity to communicate and express opinions more freely...the students have been given a greater opportunity to express their opinions. (A 14: 5)

Another interviewee reported that these applications facilitate communication in a closed society and solve problems related to classroom participation:

We chose Facebook because students use it all the time and like it, so we benefit from that in teaching. It will also help shy students to participate. In the last few years, we have had a problem in making students talk and participate in classes. We can't force them to *activate*, but these applications help us a lot. We also want to help students realise their potential, but society tradition sometimes prevents them from participating. (A 8: 5)

#### 5.4.4.6 Acquiring Additional Skills to a Student's Future Employment

The majority of interviewees, and even those who do not use online tools, stated that these applications would offer new skills to students and would give them the opportunity to compete with others students in different disciplines. Now, employers seek graduates with high level internet skills. For example, most LIS students work in learning-resource centres and libraries, including school and academic libraries. They need to have the skill and knowledge to exploit these applications. What additional value does 'Web 2.0' bring to LIS students compared with other educational technologies, such as (LMS), with regard to what they learn for future employment? Two interviewees, for example, reported that:

Almost 90% of the graduates of IS are working in learning-resource centres, which combine the traditional and the unconventional. There is a need to acquire these technology-based skills through the use of IT and internet access and available programmes...Therefore, the existence of these technologies gives the students great opportunities in addition to English. The market is now directed towards those graduates who have two skills: communicating in the English language and the ability to use these applications. Therefore, the

availability of these two skills gives them a greater chance of being recruited. (A 3: 7)

The technology is considered a necessity by the department, which aims at marketing the graduates to get the available jobs. The market demands two skills: the ability to deal with technology and English. Hence, the department assures in the new plan that these two skills must be available through 90% of the technical courses and 25% of the courses must focus on English in order to place highly skilled graduates in the market. (A 12: 8)

Yes, these tools provide great opportunities for students by using these applications... technology here is very useful, and it helps the information specialist to market him/herself through the possession of these skills. Therefore, he/she becomes able to compete with other graduates from other departments. (A 3: 6)

Not only graduates will benefit from these technologies, but also employers, through applying different applications in providing key services. The LIS graduates will be well equipped to utilise these applications.

Nowadays, if we look at any library site, we would find that the site has a link to one of the social networks. Therefore, the student will market the library and marketing is done through a group of applications, such as social networks or Web 2.0 applications. Therefore, the more the student knows about these applications and facilities and the greater the skills gained, the more closely they will be able to participate later on in their management of a library or in marketing the services of a library. (A 5: 5)

#### 5.4.4.7 Learning Outcomes and Self-Development

Respondents were asked about the additional value that these tools and applications bring to LIS students compared with other educational technologies, such as LMS, with regard to self-development. One interviewee explained this as follows:



It is certain that these applications have added value to the students, especially with regard to their personal professional development. This is because, nowadays, the internet has contributed to the students acquiring different skills. Regarding the other matters, after graduation and during the search for employment, it depends on the person themselves, especially within the closed Omani society. These applications have contributed in the development of the students. Employers now require these skills and all these things have become available through these applications. (A 15: 4-5)

Others explained their experience with regard to feedback from institutions regarding student-learning outcomes from these applications. For example, one reported the following:

Many institutes and research centres that train our students are satisfied with the students' knowledge of these applications. Therefore, I think the jobs market is heading this way. On the other side, information centres in schools focus on teaching students and teachers the skills and running workshops for them. Most teachers do not know how to use research websites and they were glad to learn when we ran some workshops for them two years ago. (A 9: 5)

Most interviewees think that these applications will play a major role in the employment of qualified graduates, because most information institutions now adopt these applications in their services.

#### 5.4.4.8 Academics' Attitude to the Form of Online Tools

Respondents were asked about the form and design of application (networking tools). Some interviewees preferred to use a particular application, rather than having many applications, while some thought that some applications were not designed for a teaching purpose. The form of some applications is appropriate to use in the education sector, while others are not. In general, there are different groups. For example, one group of interviewees pointed out that Facebook is more about social communication, whereas blogs are more appropriate in teaching and learning. For example, interviewees presented the following opinions:

Regarding Facebook, I think it is designed for the media and publishing, and is used for communication. With regard to the blog, the nature of its formation and characteristics, in addition to the nature of the site, allow publication, adding information and content. Therefore, it is possible to use the blogs effectively for scientific research and for teaching. (A 16: 5)

As anyone can see, Facebook is more open to the public and there is no privacy. However, the blogs are prepared (in their content and form) to be suitable for teaching, and you can control the blogs and control their characteristics. (A 12: 6)

I see that the blog, in its form and content, is good in teaching, especially as regards interaction. However, in the case of the e-mail, I have to wait for the students' replies. So, there is a slowness and inefficiency. (A 15: 5)

Other interviewees reported that social networking and YouTube are more appropriate to use in teaching than blogs. For example, one interviewee noted:

I use other alternatives, which might not be better ones, but Facebook is the best, although I did not use it effectively and I can't control its importance in teaching. However, ultimately, it is my role as an academic to direct these technologies to serve the courses... For example, I am not satisfied with the blogs, but I think YouTube is very suitable for teaching and evaluating the students. (A 13: 8)

It depends on the type of application. I have noticed that not many students use the blogs, but Facebook is very popular. It can be used for social communication and it is available on smart phones also. Students found Facebook a useful tool for communication, entertainment, and study. (A 9: 4)

Another group held that all of these applications are suitable for use in teaching, but there are two main elements that need to be considered. The way academics utilise and adopt this technology, and how they convince and direct students to use them. For example, interviewees reported:

I am not convinced by the idea of using it in teaching, because social networks are designed to be used socially, like social communication. The main point is to change the face of the application and to encourage the student to use the social media and Facebook in education. The process is to direct the students to using them, because most of the students use these applications for social communication. So, the whole process is convincing the students of their importance and to encourage continued use...the instructor should direct students to communicate using the social networks by designing a window to include the instructor and students. It all depends on the vision of the instructor of the application type and how it suits the course. (A 5: 4)

The main purpose of designing applications plays an important role in their use. For example, Facebook is a socially directed application. It doesn't mean that we can't utilise it in teaching. I have already mentioned that I used Facebook in teaching during the discussions that are related to the course. The issue is how to utilise and control the use. For instance, it is suggested that you monitor the use of the students for Facebook. However, some applications might have been designed to be purely academic. They might be very efficient and more significant than other applications. Therefore, using them in teaching could be a good idea. (A 2: 6)

In other words, some of the interviewees see Facebook, blogs and YouTube as social innovations.

In Moodle, we have a forum for discussion and now the university might link Twitter to Moodle. The point here is not about whether I accept this technology or not in teaching, but how we can use them in teaching. You can create a group for purpose of research and communication, and it is a good method for scientific research if we use these applications effectively and give authorisation for specific people to participate in this discussion. (A 4: 10)

These results suggest that there are differences in the attitude towards use of various online tools in education. Some interviewees see that these tools are more about

social communication, while others associated the use of these tools with respondents' attitudes and ability to utilise them in teaching practice.

#### 5.4.4.9 Online Tools as Open Platform

##### *5.4.4.9.1 Accessibility and Flexibility*

Most interviewees reported that these applications and any new online tools would be an open gate for their contributions compared with other technologies. This included new options for graduates, which were not made available by traditional technologies. Even Moodle, supporting new technologies such as wikis, has limited availabilities; only students who have access to the course can have access to the wiki. It is not an open platform and does not usually have an existence beyond the duration of the course. Two interviewees reported their experience as follows:

Regarding Moodle, the student cannot access and get benefit from it after graduation, unlike the Web 2.0 applications. The difference between them is that Moodle is used by the student for the purposes of a particular course and, once the course or the semester ends, the participation of students and subscriptions to Moodle end as well. However, other applications, such as Facebook and Twitter, are open continuously and the students can use them effectively to communicate with colleagues at work in the preparation of shared activities, which might be research or professional... (A 16: 8)

There is flexibility in using these applications. Regarding the rest of the applications, we can access them wherever we are, the students can interact, at any time, from home and we can discuss or interact on matters related to the course. However, the university-licensed applications such as Moodle are unavailable off-campus. There might be a certain policy or certain reasons that we do not know about behind the inactivation of these applications... If we talk about Moodle, after the end of the course, the students stop using it. In my experience with using internet applications, especially LinkedIn and Academia.edu which I use effectively, they are still used by the students after the end of the course. Discussions between the students are still going on even after graduation. (A 2: 7)

#### *5.4.4.9.2 Graduates Communication Open Platform*

Another academic interviewee reported that online tools such as Facebook and blogs can be used as a platform for communication with graduates (past students) regarding different issues:

I communicate with graduates through Facebook in order to answer their questions, which are not necessarily related to the department or the specialisation. However, these questions are related to decision making in daily life, when looking for jobs, and in consultations. (A 7: 5)

Another interviewee reported his experience with students as follow:

In fact, in my experience, lots of students thank us for using these applications in teaching and have started to apply them in their work. They also have continuous contact with colleagues in other forums. That might be a result of using these applications in the teaching process...Through the course, they acquire the skills to use these applications at their work places. They might use them in discussions and one of the students has pointed out to me that he uses them in transferring information about the job. (A 2: 7)

#### *5.4.4.9.3 Usefulness and Ease of Use*

Respondents were asked to describe the usefulness and ease of use of online tools such as Facebook, blogs, LinkedIn and Twitter. This sample of interviewees believes that the use of these applications or tools requires little or no effort. For example, interviewees reported the following:

There is no difficulty in using them; I think it's easy, especially for the new generation, and they can acquire many skills through them. (A 16: 8)

Regarding use, they are easy to use and do not differ from other applications, and they are not complicated like some systems. (A 14: 7)

The most important point here is that these applications are easy to deal with and easy to administer. These are the characteristics of LinkedIn and Academia.edu. Consequently, I have noticed serious interaction within my group of students...so it may be said that these applications are characterised by ease of use, ease of control and administration. (A 2: 5)

As discussed in section 3.3 that an open platform is one of the vital characteristics of these tools, which seeks to create an online learning environment for exchanging knowledge and experience. These characteristics may motivate the academics to adopt and utilise these tools in different purposes.

#### 5.4.4.10 Future Directions in Use of Online Tools in Teaching

There is an intention amongst most interviewees to adopt and use various online tools in their teaching. These include Facebook, YouTube, Twitter, LinkedIn, blogs and Google docs. Some interviewees expressed their desire to develop their professional skills through the use of these applications. For example, one of the interviewees reported:

I feel the need to develop myself. I can attend the workshops and the training courses to take advantage of various internet applications in teaching courses, like the workshop for using Google docs. So I decided to enrol in courses that are related to Web 2.0 so we might utilise them in teaching. We can also take advantage of colleagues' knowledge of these applications. (A 3: 5)

Another interviewee plans to adopt some applications in order to keep pace with students who had already started to use them:

There are future plans to use some applications like Facebook, YouTube, and Twitter as we have noticed that the students are interested in them. These applications will support the courses and develop the communication skills of students. (A 9: 3)

However, some of the interviewees have no clear intention regarding the adoption and use of such applications in teaching. For example, one of them indicated that:

I always think to change to new ways and methods in accordance with my needs, even in the method of presentation and the content of the subjects. Thus, I always update and revise the courses. However, there is no future plan to apply or teach the use of particular applications. (A 3: 6)

Furthermore, several key issues were discussed by interviewees in regard to their intention continue using LMS and online tools. Some interviewees prefer to use Moodle in teaching rather than online tools such as Facebook and blogs. Those are the same interviewees who classify Moodle as 'Web 2.0' applications. For example, one of these interviewees stated:

I prefer using Moodle for teaching because it is designed specifically for education, while Web technologies or so-called Web 2.0 applications are designed specifically for social networking through the exchange of images, files, and everything related to social life. I haven't actually used these applications effectively in the teaching process. (A 14: 4)

Another interviewee described his experience as follows:

I need Facebook to communicate with researchers outside university... currently I'm satisfied with Moodle for teaching. However, I might use these applications if the university starts to use them. I'm not the only one who doesn't use these applications. I think having Moodle is the reason for that. For example, to the fact that other websites have the same features and facilities does not encourage me to use them...In fact, I do not use these applications and I have a Facebook account but rarely use it, so I do not know the facilities there. I think there are a lot of social networks and I can't see any need for them in an academic environment. We have Moodle and allow communication, so there is no difference between them. (A 11: 4-5)

As mentioned in section 5.2 that most academics have already used Moodle in their teaching. These results suggest that the use of Moodle could be one of the reasons as to why few of the academics choose to use these tools in their teaching practice. Moodle also is under the direct control of the university.

#### ***5.4.5 Attitude Towards the Label '2.0'***

##### ***5.4.5.1 Ambiguity of the Term '2.0'***

'Web 2.0', as discussed in chapter 3, is a complex and multi-dimensional term with many meanings, often guided by context and history. In the interviews, respondents were able to discuss this ambiguity and present their own view on what 'Web 2.0' means. 'Web 2.0' support a wide range of applications. The characteristics provided by Moodle, especially the new version, such as adding and creating content, have the same functionality with the 'Web 2.0', leading to some interviewees classifying Moodle as 'Web 2.0' application. In other words, some of them engaged with Moodle as is a form of 'Web 2.0' versions, while others show a different understanding of this version. This reflects their using of this technology.

There are three broad groups in term of their response to 'Web 2.0'. The first group believes that the Moodle is part of 'Web 2.0'. Some of them frame their views according to the functionalities and characteristics of Moodle such as the integration of certain technologies, like wikis, to the Moodle. One of the interviewees commented:

According to my understanding, Moodle is very similar to the Web 2.0 application. However, Moodle is a package designed for a basic purpose (education), and has now turned global. The university has made some changes in it, and it is available on the university network. I think it is one of the Web 2.0 applications and that it is no different. What I care about is that features of Web 2.0 can be found in Moodle, and wikis and blogs are also available in the new version of Moodle. (A 8: 4).

Another interviewee claims that Moodle is a form of 'Web 2.0' due to its new characteristics and user ability to produce content. She reported that:



With regard to Moodle's characteristics, it allows the same properties; so, it is within the Web 2. It also provides access to certain people inside the university, so it is protected. Lastly, it is an application of Web 2, as it allows the production of information and communication. However, the issue of access for non-authorised persons remains...Therefore, as long as it allows addition and communication, it conforms to the descriptions of Web 2.0... Regardless of the issue of access and subscription, I consider Moodle as Web 2.0. As long as I am able to produce the information and add remarks, I consider myself using Web 2.0. The difference between Moodle and wiki is in the access and who performs the addition of information. However, both of them are within Web 2.0. (A 13: 16-17).

Other interviewees also use Moodle to talk about 'Web 2.0' applications, as particular the capacity of Moodle to add and create content, and to facilitate the teaching process. It helps with the interactions and collaborations amongst students, and is considered an important part of 'Web 2.0' applications.

It is also a part of the digital content. Now, all videos, materials and links are available in Moodle. (A 10: 6)

Another interviewee was asked about the categories Moodle could be classified into; he replied:

I think it can be regarded as one of Web 2.0 applications because the user can download and share information with others through it. (A 5: 7)

Other interviewees claim that the new version of Moodle provides more opportunities to students as well as the academics to be more effective in the learning process. Moodle creates a sort of interaction between the students themselves by posting topics for discussion. This concept of an interactive exchange is a part of 'Web 2.0' as cited by many scholars in the literature.

The second group of respondents considered Moodle as a completely different entity from 'Web 2.0'. They argue that 'Web 2.0' has many characteristics that differentiate

it from Web 1.0 or the so-called traditional Web as well as from LMS such as Moodle. 'Web 2.0' is opening new doors for students with regard to more effective learning through freedom of creation and participation in the content as well as control of their own applications. One interviewee, for example, reported a problem of mixing 'Web 2.0' with LMS. He describes his experience as follows:

I do not think that Moodle is a part of Web 2.0. Web 2.0 is available for all, and everyone can participate and control a certain application. On the other hand, Moodle has been designed for the teaching process for specific courses and subscribers. Hence, the course is prepared for communication between student and lecturer. Even the students cannot gain access to other unauthorised courses. (A 16: 13)

Another participant revealed that 'Web 2.0' is flexible and accessible at any time and place, whereas Moodle is a relatively inflexible system. Learning and teaching within 'Web 2.0' is not restricted to the classroom or formal learning inside learning institutions, whereas Moodle is restricted to the courses available in learning institutions.

If we talk about Moodle, after the end of the course the students stop using it. In my experience of using internet applications, especially LinkedIn and Academia.edu...they are still used by the students even after the end of the course. The discussions amongst the students continue even after graduation. (A 2: 7)

The third group is not clear about the concept of 'Web 2.0', and whether Moodle should be classified as such. For example, one participant reported:

I do not know if we can classify Moodle as an application of Web 2.0, because it is based on interaction. (A 9: 3)

Another interviewee had no clear idea about 'Web 2.0' and what it encompasses. He claims that 'Web 2.0' promotes Moodle by adding new characteristics to it, or Moodle can be compatible with 'Web 2.0', considering its applications. He reported:

Maybe the Web 2.0 has given Moodle more importance. Moodle is one of the programs that are used to serve distant-learning, and applications provided by Moodle are compatible with Web 2.0 applications. (A 3: 10)

Table 5.3 indicates these three groups by gender. It is encouraging to note that most of respondents (n=10) believe that the Moodle is part of ‘Web 2.0’ against (n=3) believe that the Moodle is completely different from ‘Web 2.0’ and ‘Web 2.0’ is more than Moodle whereas (n=4) of them found it difficult to classify this. This further indicates that ‘Web 2.0’ is an ambiguous term. Again, it should be noted that there are only five females in the population; therefore, this result does not reflect gender differences in their response to ‘Web 2.0’.

Table 5.3 Three Groups of Interviewees Concerned With Web 2.0 Term

	<b>Group 1: Moodle is part of Web 2.0.</b>	<b>Group 2: Moodle is completely different from Web 2.0</b>	<b>Group 3: Not clear about the concept of Web 2.0</b>	<b>Total</b>
Male	(6)	(3)	(3)	(12)
Female	(4)	(0)	(1)	(5)
Total	(10)	(3)	(4)	(17)

#### 5.4.5.2 Various Understanding of the Term and the Label ‘3.0’

There is no clear agreement amongst the interviewees as to what ‘Web 2.0’ actually means, or fully encompasses. Interviewees were asked to explain their understanding of the concept of ‘Web 2.0’. Most of the interviewees believed that ‘Web 2.0’ made UGC a possibility, along with movement to producer roles within the internet, sharing, communication and participation. Three of the interviewees expressed their view as follows:

Regarding the Web 1.0, it only has one phase. It also has a producer for the information and a recipient who has no privilege to produce or participate in this piece of information. On the other hand, Web 2.0 gives the opportunity for the recipient to participate in many channels such as blogs, Facebook, Twitter, and so on. In this case, the user has a role in participation. (A 12: 12)

When we talk about Web 2.0, we have to go back to the definition of Web 1.0 and activities that are not allowed, such as adding comments and new content. I am not a producer of the information, I am the recipient. Web 2.0 is an advanced and a better step, which allows me to comment, add, and so on. Regardless of the different names like Web 2.0, wiki, Moodle, and others, as long as the above-mentioned options are allowed, in addition to accessing them at any time, I am in favour of Web 2.0. (A 13: 16)

The definition of Web 2.0 is very difficult to explain. Usually, students are told that Web 2.0 is used for searching. Web 2.0 was not initiated in this manner...when you share these files or any type of information, you create a new service through the search. This search provides you with services and gives you opportunities as a reader, a writer, an editor and a producer. (A 4: 3)

Other interviewees discussed Web 2.0 as new communication channels including Twitter and Facebook. It has facilitated communication in ways that the traditional Web has not.

They are the ones who produce the information on Websites in general, where people can interact, communicate and participate. In comparison, Web 1.0 was founded by the institutions and individuals, and it contains ready-made information. (A 16: 12)

I started talking about Web 2.0 in 2004, and it was preceded by the Web 1.0. However, currently, no one speaks about the Web 1.0. Web 2.0 opens new horizons, sharing the work and participating in the research and collaborative work. (A 3: 10)

We can describe Web 2.0 as a World Wide Web with a group of programs to enhance social communication. (A 9: 7)

The Web 2.0 is like a human mind which contains billions of cells, and the mind is open to all...We should note that Web 1.0 is for searching and

retrieving, whereas Web 2.0 is a place for all to participate and contribute. (A 4: 13)

Two interviewees related the term to the creation of highly interactive Web pages.

We can view Web 2.0 as an interactive environment with many functions and applications that may be used in many fields. (A 10: 6)

I see that the Web 2.0 is a change from the stage of interaction with the internet, without the presence of responses to the interaction between the user and the device that connects you with other networks. This is the concept of the Web, which is a transition from the receiving stage to the interaction stage. (A 17: 8)

However, several interviewees think that the role of 'Web 2.0' applications should be focused on rather than the concept itself. One of these interviewees reported:

The definition of Web 2.0 is unimportant. Regardless of the classification of the Web, the most important point is the matter of its usage. (A 15: 7)

Another interviewee was more concerned about the role of academics in exploring these technologies and facilities that can be beneficial for them.

Web 2.0 is a revolution that fulfils the need of people and institutes to communicate. Thus, it is our duty to exploit its facilities. (A 5: 7)

The applications encompassed by 'Web 2.0' or another label, such as 3.0, are by no means limited to blogs, Facebook, or any recent and popular SNSs. As an example, one interviewee argued that:

There are other technologies that are very important, which I have not used personally, such as Flickr, where you can get a set of images to serve the specialisation and use it for teaching in the future. There are other applications that might provide characteristics and support the teaching process. (A 3: 10)

This view is supported by another interviewee:

Web 2.0 is a comprehensive term that includes our usage of Twitter, Facebook, and so on. There might be other applications within the Web 2.0. (A 15: 7)

Another interviewee pointed out that we are in Web 3.0. Some sites emerge with a combination of 'Web 2.0' and 'Web 3.0' characteristics. He described his experiences regarding 'Web 2.0' and 'Web 3.0'.

Other methods, especially in the course of subjective analysis, can be found in the new direction in this course, which is also called informatics; it is one of the Web 3.0 applications. For instance, social communication is one of the applications of Web 2.0, and there is still another characteristic of Web 2.0 related to Web 1.0, a search process performed on the forms of terms... Regarding Web 3.0, the new feature is that we deal with the definition and not with the terms. As a result, it searched for a term in the related terms. The whole process of search will be focused on all related terms, called the "definition of informatics". Informatics course deals only with the definitions, not with terms...the database depends on the definition of informatics. (A 12: 4-5).

Table 5.4 summarises all the descriptive words to 'Web 2.0 label' mentioned by respondents and how many times each was mentioned.

Table 5.4 Concepts Used to Describe 'Web 2.0 label'

Concepts Used to Describe 'Web 2.0 label'	Number
Ability to share information	11
Ability to participate and add content/comments	9
Social communication/New communication channel	5
Ease to access and more flexibility	2
New interactive environment	2
Social networks/integrated networks	2
Group of applications such as Facebook and Twitter	1

It can be noted that there were two important elements used to describe 'Web 2.0' by most respondents, "ability to share information" (n=11) and "ability to participate and add content/comments" (n=9). As mentioned in section 5.4.5.1, Table 5.3, there

are three broad groups in term of their response to ‘Web 2.0’. The researcher summarises data from Tables 5.3 and 5.4 to create a contingency table (Table 5.5). It is interesting to note that most respondents in group one described ‘Web 2.0’ as “ability to participate and add content/comments” (n=9) and “ability to share information” (n=11). It is observable that group one might describe ‘Web 2.0’ according to their experience with Moodle and what they believe of it while they use Moodle to mean adding and sharing information.

Table 5.5 Concepts Used to Describe ‘Web 2.0 label’ Divided by Groups

Groups	Ability to participate and add content/comments	Ability to share information	Total
1. Moodle is a form of ‘Web 2.0’	6	8	8
2. Moodle is a completely different entity from ‘Web 2.0’	3	2	3
3. Not clear about the concept of Web 2.0, and whether Moodle should be classified as such.	0	1	1

## 5.5 Motivations/Incentives for Adopting of Online Tools in Teaching

Interviewees were asked to explain the reasons, factors, or motivations that drive them to use online tools, including ‘Web 2.0’ applications. Sub-questions were asked to explore the interviewees’ motivations for using these applications for teaching or other purposes. Several key motivations were discussed by interviewees, principally the struggle for survival in digital academic environments; job market needs and remaining competitive; communication technologies and socio-cultural issues

### 5.5.1 Struggle for Survival in Digital Academic Environments

Interviewees explain their thoughts on the issue of the academics workplace and profession in different ways. One of the interviewees stated that:

I want to survive and I feel that I do exist. Resistance does not mean resistance to technology, but steering clear of the negative aspects of technology. I want to live in this new age. The second point is that I want to feel close to my

students. I'm not just teaching; I'm also a researcher and a lecturer. So, my second motivation is to survive within the academic environment. (A 4: 11)

In the academic realm, surviving in the digital era requires modifications to changing teaching styles and enhancing course delivery. Both require the interviewees to use technology as a teaching tool. One of the interviewees explained his motivation to use technological applications as follows:

The main motivations behind my use of these applications in courses are providing students more than just routine teaching and achieving the goals of the courses... other motivations are related to developing the academic proficiency of students. As an academic, I use different teaching and evaluation techniques, and have found that these applications help me accomplish my responsibilities...I think that in the coming years, no academic will follow the traditional way of teaching. (A 2: 12–15)

The same reasons were indicated by another interviewee, who is motivated to improve teaching methods using technological applications. He states that:

My motivations include wanting to enrich courses, as well as developing and varying teaching styles to provide students substantial opportunities to benefit from the courses; the ability to accomplish these goals also enhances the reputation of academics. (A 3: 9)

Another interviewee describes her motivation for using Web applications in delivering course content:

You want to reach students easily and as fast as you can. You can't convince them of the value of a course through long explanations. They will feel bored and will be unreceptive to new ideas...Web applications have facilitated this process and have made the acceptance of information easier through videos and other similar materials. They give students power. Instead of being merely consumers, they are producers and you feel the exchange of roles when students accomplish assignments. (A 13: 14–15)



One of the interviewees also believes that traditional methods cannot effectively convey information. New technologies and exposure to other people's experiences are necessary. These factors drive him to explore and adopt online tools in teaching, viewing it as a novel way of enhancing teaching styles:

Conveying information to students only through words is useless. We need to support this process with audio-visual materials, other applications, or the experiences of people who created the technology or Web 2.0 applications. (A 15: 6)

The survival of academics in constantly changing academic environments depends on excellence that may be achieved through the adoption of new technologies for knowledge transfer. An interviewee shares the following argument:

There is an important point here, which is, that everyone looks forward to distinguishing himself/herself from others. Achieving this distinction can be obtained through creativity and innovation. Thus, I try to learn more about Web applications to complete all the requirements of my job in the best way possible. I have to gain the trust of my colleagues and my students. This is the final result of using such applications. (A 12: 10)

In the digital academic environment, internet and communication developments compel academics to continue learning and updating their knowledge on new technologies given that other parts of the world uses these technologies in higher education. One of the interviewees points out that:

Learning about these technologies is not optional; it is compulsory because of the continuous development of ICT. These technologies are also valuable for courses that should be based on global experiences. Thus, I believe in the necessity of referring to the experiences of developed countries in terms of teaching techniques and professional development. I can use modern methods to develop myself and support course content delivery. (A 9: 6)

### ***5.5.2 Job Market Needs and Remaining Competitive***

One of the main reasons these technologies are adopted in the LIS departments is the necessity of looking into the current needs of the market in terms of digital innovations and internet developments. Such adoption is also important with respect to the competencies of graduates. The needs of the market and society encourage graduates to acquire comprehensive knowledge of these technologies. For example, an interviewee reported that:

Using these applications facilitates professional development and enables graduates to bring excellent qualifications to the job market. Graduates should update their knowledge of new technologies to secure good employment. The benefits of these applications aren't restricted to me alone; they are also advantageous to new graduates. (A 10: 5)

The needs of the market drive the academic interviewees to provide graduates with knowledge and skills on recent technologies. This effort will help students thrive in the workplace and compete with others. One of the respondents explains this point as follows:

The job market prefers highly skilled graduates. Frankly speaking, this is one of my aims in teaching a course. After graduation, the students can use these applications in the workplace...We see that the market demands these skills from graduates, especially since most institutions currently have Facebook and Twitter accounts. The job market therefore determines what teaching techniques to use. (A 2: 13)

### ***5.5.3 Communication Technologies and Cultural Changes***

The emergence of new mobile communication devices, such as the iPhone and Galaxy smartphones, and other smart devices such as the iPad and Galaxy Note, facilitate the use these online tools. The current popularity and availability of these devices encourage students and academics to use online tools. Several interviewees noted the importance of these devices.

New smartphones have made technology use easy and have increased usage rate. There are also programmes on and links to Facebook, Twitter, and YouTube in these smart phones. (A 5: 6)

The new generation frequently interact with new technology because almost all students now have laptops and smartphones that can easily connect to the internet. (A 9: 2)

These technologies have become necessities, so we have to use them. Smartphones have internet applications that can be used anywhere, anytime; you can download applications and engage in online discussions through these phones. For example, we can use smartphones to communicate with students through Web applications without having to go to university or the workplace. (A 14: 8)

Some interviewees noted that the development of culture and society contributes to the use of the internet and exploration of new technology.

We live in the digital age. We cannot leave our houses without a mobile or laptop. Living in this era means you have to act accordingly. Most organisations have embraced this era. We pay for utilities, get our salaries, and deposit money electronically. As a professional, if you are unaware of such facilities, then your skills become out-dated. Nobody uses a traditional printer anymore. We use the computer to write, edit, send, attach, forward, and record; these all fall under technology. (A 4: 7)

## **5.6 Barriers and Challenges in Utilising Online Tools**

For online tools to be effectively implemented in education, numerous challenges should be overcome. Exploring the barriers that confront instructors as they adopt these technologies is therefore necessary. The respondents were asked to identify the obstacles that prevent them from using various online tools. In addition, sub-questions were asked where necessary to comprehensively explore these issues in relation to teaching.

### ***5.6.1 Workload and Insufficient Time to Learn***

Most of the interviewees report that heavy workloads influence the amount of time and effort needed to learn about online tools and to effectively use them in teaching. They indicate that they have been assigned additional responsibilities, such as the provision of community services. The increase in teaching hours and number of students in colleges affect the interviewees' ability to participate in other activities. Some interviewees reveal that this problem is particularly evident in the College of Arts, which has many students and offers elective courses to the entire student body today at the university. The interviewees also highlighted the need for adequate time and effort in developing and publishing course content. An interviewee who extensively uses 'Web 2.0' applications states that these factors (i.e., workload and insufficient time) constrain the use of Web applications.

The main difficulty stems from heavy workload, and it significantly limits my use of the applications. I spend twelve academic hours teaching, apart from administrative work that entail considerable time. So, this issue prevents me from using the applications in thoroughly engaging in discussions with my students...Time management is also important to teaching and using these applications; organising these responsibilities, along with administrative work and family duties, is essential. (A 2: 14)

The Department offers academic programmes that require substantial effort and time in terms of continuously developing materials and course content. The need for constant development arises from the expansion of ICT. In addition to these tasks, teachers are assigned supervisory and coordination duties.

The first difficulty in teaching is the heavy 12 hour workload. This problem is worsened by the fact that we handle more than 60 students in each class and are required to continuously develop materials. Supervising master's students also uses up a lot of time. (A 3: 9)

Academics are devoted to teaching, especially to satisfying the required number of teaching hours. Research, committee meetings, and community

service are additional responsibilities. I think that all these issues limit the use of Web technologies in teaching. (A 16: 11)

Conversely, some interviewees do not consider the aforementioned issues a major challenge to adopting these technologies, as they are acquiring the necessary skills for their personal use. Nevertheless workload would still important on their implementation in the workplace.

Workload may affect adoption but it is not a major problem because sometimes, we use these applications for pleasure, as well as to escape from the routine of work and traditional communication. However, work pressure prevents us from accomplishing some jobs, especially those related to Web 2.0...I also have sufficient time and I can use these applications using the iPad even when I sit with my family. (A 7: 9)

Another interviewee was asked about whether overtime work is considered a difficulty. He says that doing overtime work is not an excuse but somewhat contradicts this statement by saying, “the only obstacle is having the time needed to acquire skills. Workshops would help us save time”. (A 5: 6)

## ***5.6.2 Non-Conducive Environment***

### **5.6.2.1 High Internet Prices**

The price of internet services is an issue in many Arab countries. At the university campus accommodation, price is generally not an issue but subscription to the internet is costly outside university. As previously stated, most of the interviewees access the internet from their offices at the university.

Internet subscription provides us limited hours; this is a demotivating factor because it is costly. Reasonable prices, better quality, and better facilities may encourage the use of these applications. (A 16: 11)

In the campus, all the departments have internet facilities and services, but we do not feel the benefits. When we leave the university and use these services

outside the campus, we encounter problems. First, internet subscription is very costly. Second, sometimes the network suffers from problems because only one telecommunications company provides the services. There is no competition, which also adds to internet prices. (A 4: 13)

By contrast, one interviewee contends that expensive internet subscription is not an issue for many people.

My financial income is good, and I can get whatever I want without suffering from any financial barriers. (A 7: 9)

#### 5.6.2.2 Network Speed and Disparities in Access

Slow internet connection presents problems in downloading Web applications. Some of the interviewees claim that their internet connection is unstable and frequently disrupted.

Frankly speaking, when I download some applications, I feel upset because internet access is slow and frequently shuts down. As a result, my time is wasted. (A 7: 9)

Others state that the disparity in internet coverage varies between different regions of the country. Two interviewees share their opinions:

There are no obstacles in using internet applications, but there are some issues associated with connection speed, especially in different regions of the country. (A 14: 9)

The problem is that the network is slow. Without an effective internet infrastructure, the network will remain slow, especially when services are accessed outside the university. Some areas particularly suffer from this problem, but within institutions, network speed is highly satisfactory. (A 1: 7)

### 5.6.2.3 Lack of Services and Facilities

Telecommunications companies and the government provide poor-quality services and facilities according to the several interviewees

The internet services provided in this country continues to be disappointing. Consumer dissatisfaction should be taken into consideration...we do not have a strong foundation, whereas other countries are very advanced. There are no competing companies because of the country's policy; the lack of awareness in the country is a result of the same lack of awareness in society. (A 7: 9)

The problem is due to companies that offer internet services and the facilities provided by the government; the issue has to do with providing sufficient telecommunications infrastructures and facilities...With respect to pricing and quality of service, those offered in other countries are better. Coverage is also wider, making such services available in many places, such as markets, cafes, and restaurants. Certain countries do not suffer from the conditions evident in our nation. (A 16: 11)

Another interviewee blames lack of market competition for the continuing internet-related problems. He indicates that a monopoly controls the market, driving prices high.

There is no competition between companies; competition may increase the number of service offerings and may result in more competitive pricing. Under the absence of competitors, a few companies monopolise services and systems; there will be little differentiation amongst them. This problem is evident in relation to subscriptions outside the university. In the university, however, good services and facilities are available. (A 13: 16)

Another interviewee identifies telecommunications policies and regulations as impediments to accessing Web applications.

Telecommunications companies impose restrictions on the use of some applications. The university and a company may enter into an agreement regarding which applications can be freely accessed within the campus. Thus, you can't download applications that may be helpful to online teaching. Furthermore, during certain times of the day, the network is slow. I sometimes ask students to meet with me online in the evening because at this time, there is less pressure on the network and we can easily access applications. (A 2: 14-15)

The services and facilities at the university are acceptable, with the university attempting to provide high-quality internet services.

In fact, SQU provides a lot of services and facilities, such as internet access, tools, and devices. It also provides laptops to each instructor. In addition, there is a wireless network-equipped room with new devices, and apart from specialist Moodle technicians, other technical personnel are around to help you. The university offers numerous workshops. The environment is very suitable for modern teaching. (A 10: 6)

### ***5.6.3 Lack of Encouragement and Incentives***

The institution pays little attention to the importance of incentives in encouraging academics to use online tools, including 'Web 2.0' applications. The academics' use of 'Web 2.0' applications can be associated with their perceptions of their facilitators' encouragement or lack thereof.

There are no incentives or encouragement from the institution. The internet, Web 2.0, and social applications or social multimedia are changing human life. (A 7: 9)

For another interviewee, heavy workloads again remained as a disincentive.

The Omani environment does not help academics because they are expected to function at unimaginable workloads. We also have no time for scientific



research. So, there are no internal motivations that encourage us to use these applications. I usually go home very late and I find myself having no desire to think about and use the applications. In addition, I have no power to put in additional work and I feel my nerves breaking down...All these things happen because of lack of motivation, and you feel that academic employees are excessively exploited. (A 15: 6)

Another point related to lack of encouragement is the insufficient reward provided to individuals.

The time, effort, freedom from work, and financial incentives that encourage a person to go the extra mile—all these are unavailable. (A 17: 8)

#### ***5.6.4 Lack of Student Awareness and Willingness***

The issues of user acceptance and awareness of new technology are crucial to every academic community. These enhance the use of online tools, particularly in teaching and learning. Persuading students to willingly use them as they learn is a critical task.

Another point is how we can help students realise the importance of Web applications and convince them that success in this course is based on these applications. The issue is not restricted to usage; it extends to the manner by which we persuade students that these applications are significant in acquiring different skills that will enable them to achieve the aims of a course...it is necessary to determine how an academic can motivate students to use these applications, and evaluate the interaction of students with such technologies, and create examinations using these innovations. (A 2: 14)

Another interviewee claims that students and academics need more knowledge and training on the use of the applications. An awareness of each student's perspective is essential to effective persuasion.

The university's provision of wireless services suffers from several problems. One of these problems is that students use the internet more frequently for

personal purposes than for learning. The university shows a preference for internet cafes, prompting students to browse sites, such as YouTube, mainly for leisure. So, the university was compelled to shut down a number of websites because students obtain no benefits from them...I have noticed that the academic environment, including academics and students, requires excellent technological literacy and knowledge. (A 4: 12)

### ***5.6.5 Security and Privacy Concerns***

Most problems with respect to internet privacy originate from email and online services. Several respondents raised issues associated with privacy and security in applications such as Facebook, as they are concerned over the availability of personal information on social networking sites.

Some people view them as immoral and encouraging of unwanted relationships in the campus, but I don't see this as a core reason. What I care about is information security and privacy. People still feel conscious about using Facebook because of rumours about access to private information. (A 11: 6)

Social networks suffer from many problems in relation to privacy. You place personal information and everybody can access it. Many institutions get information from these websites; we unknowingly expose ourselves to people. There are other ways to communicate instead of using these tools. (A 3: 4)

The main concern when using these applications in teaching is the protection of the privacy and security of academics and students' information. For instance, it is difficult to use the Facebook in teaching because of this issue. (A 2: 14)

It seems that the presentation of identity and privacy concerns related to Facebook is one of the main issues of concern for several interviewees in the academic arena. This finding is consistent with those of Gross & Acquisti (2005); Ellison et al. (2006); del Val et al. (2010); and others.

## Chapter 6 Questionnaire Findings

### 6.1 Introduction

This chapter presents the findings derived from the questionnaire survey. As previously mentioned, the questionnaire was developed in its initial form based on the initial investigations (a preliminary study), the previous stage (interview stage) and the literature review. A total of 147 questionnaires were found to be valid, giving a response rate of 85%. Four questionnaires were found to be not valid and were discarded. Data was coded and entered into SurveyMonkey software and then downloaded automatically to SPSS software. Both descriptive and inferential statistics were employed in order to answer the research questions and objectives of this study.

This chapter is divided into two main sections: the first section derives descriptive analysis for each of the variables presented in the questionnaire, while the second section derives comparative analysis of selected variables including the test of the difference between two independent variables and correlation analysis in order to address the research questions and objectives of this study. The chapter presents the results without detail, as Chapter 8 will provide discussion and focus on the interplay of interviews, surveys, and case studies.

### 6.2 Descriptive Analysis

This section presents the main findings obtained from the surveys using SPSS descriptive statistics procedures. It presents the descriptive statistics of the sample (i.e., demographic characteristics); internet use; LMS; Web 2.0 concepts; the context of online tools; personal and learning activities on the internet, and motivations and barriers/difficulties to adopting online tools. This includes frequencies and percentages of the variable distributions. Mean scores were calculated where appropriate in order to group variables and indicate the comparative frequencies of the participants' responses.

### 6.2.1 User Profile

Table 6.1 illustrates the distribution of the participants according to their gender. As indicated previously, the majority of participating IS students are female (74%, n=109), while males constitute 26% (n=38) of DIS students. By comparing the number of students who participated in this study to the total number of students enrolled at DIS, it was found that the distribution of students according to their gender closely parallels the distribution of the whole population.

Table 6.1 Gender

		<b>Number of students at DIS /2012</b>	<b>The number of students responding to the study (Frequency &amp; Percent)</b>	<b>Valid Percent</b>
Gender	Male	45	25.9% (38)	25.9
	Female	128	74.1% (109)	74.1
	Total	173	100% (147)	100

This disparity between males and females is likely to be explained by the cultural attitudes and population of the Omani society that may result in males being reluctant to accept this major, or a higher number of female students being eager to study at SQU rather than males. In all countries (Asian, Western, Arab) observed, librarianship is predominantly a female profession. The present and valid percent were the same because there were no missing data points.

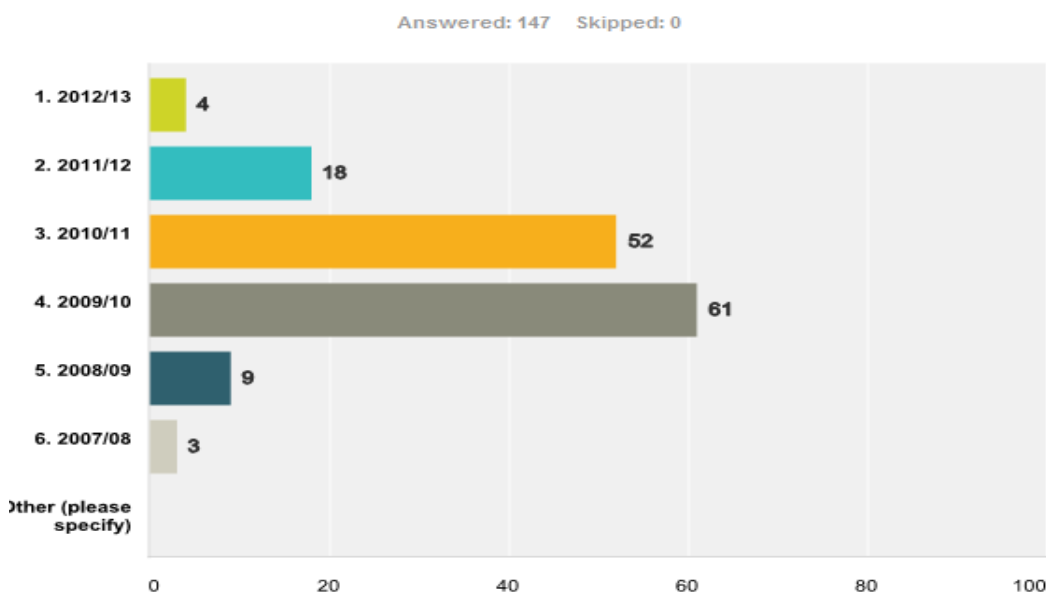
Table 6.2 reports the number participating in each program at DIS. Almost 87% (n=128) of the respondents were studying for a Bachelor's degree; 12 % (n=17) for a Master's, and nearly 1.4% (n=2) for a PhD. No diploma students participated because this program was not offered at the time this study was conducted. The PhD program commenced recently (2012) and DIS policy is to accept a maximum of three students at the initial stage. As such, it was found that the distribution of students according to their academic degree paralleled the population distribution.

Table 6.2 Academic Degree

	Frequency	Percent	Valid Percent
1. Bachelor	128	87.1	87.1
2. Master	17	11.6	11.6
4. PhD	2	1.4	1.4
Total	147	100.0	100.0

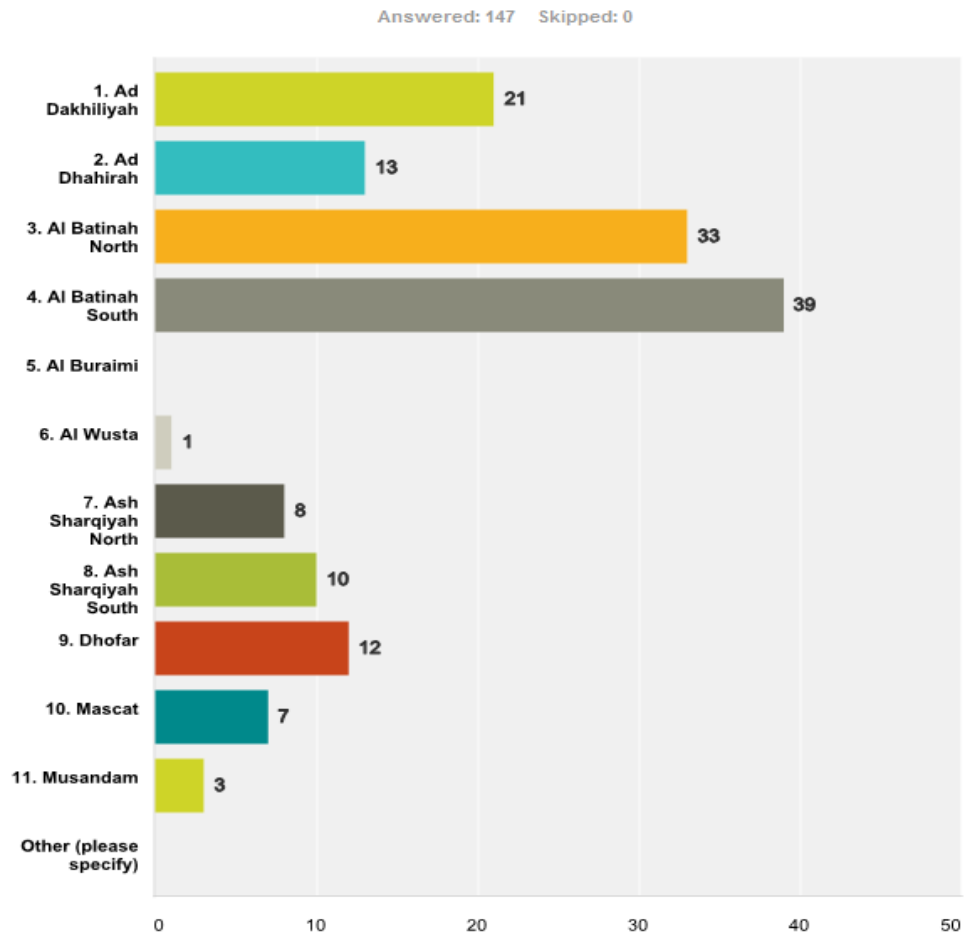
Figure 6.1 illustrates the number of students by academic year who participated in this study. Most students are in their third or fourth year at DIS. As noted previously in Chapter 2, the SQU system requires all students to enroll in a foundation year program before joining a department at the college. This explains the low number of commencing students in academic years 2011/12 and 2012/13, while the lower number of commencing students in academic years 2007/08 and 2008/09 was due to postponement or withdrawal from study following admission.

Figure 6.1 Academic Year



As reported in Figure 6.2 below, most students participating in this study come from Al Batinah province (n=72) (Al Batinah North and Al Batinah South) and this is due to the population of this province – most of Oman's population lives in this province as noted in Chapter 2.

Figure 6.2 Respondents Distributed by Province



### 6.2.2 Internet Use

In section two of Part A of the questionnaire, the respondents were asked six questions regarding their internet use. The first question assessed the internet skills of the respondents. They were asked to classify themselves according to five scales as shown in Table 6.3. More than half of the respondents described their skills as “Good” (61.2%, n=90), while 20.4% (n=30) were “Average”, and 17.7% (n=26) were “Excellent”. Only 0.7% (n=1) classified themselves to be at the “Poor” level. None of them believe themselves to have “Very Poor” skills. The mean score calculated for this response was 3.9592, which shows that the mean self-assessed score for internet skill received from respondents was very high. This is likely to be explained by the nature of LIS courses, which focus more on ICT, in addition to the foundation program for new students which covers IT skills as indicated in Chapter 2.

Table 6.3 Internet Skills of Respondents- self-assessed

	Frequency	Percent	Valid Percent	Mean	Std. Deviation
1. Very Poor	0	0	0	3.9592	.63975
2. Poor	1	.7	.7		
3. Average	30	20.4	20.4		
4. Good	90	61.2	61.2		
5. Excellent	26	17.7	17.7		
Total	147	100.0	100.0		

In terms of their first internet use, as indicated in Figure 6.3 below, most respondents started to use the internet in the period from 2004 to 2009. As noted in Chapter 2, the internet launched in Oman in 1998 at SQU.

Figure 6.3 Year of First Internet Use

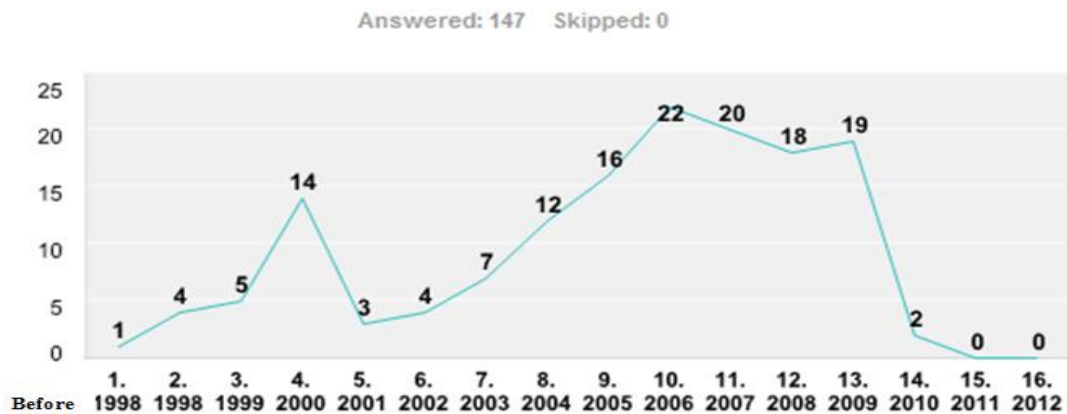


Table 6.4 illustrates the frequency of usage for four types of devices in accessing the internet according to a five point scale; 0 = “Never used”, 1 = “Occasionally”, 2 = “Sometimes”, 3 = “Often”, and 4 = “Very Often”. The majority of respondents (99.3%, n=146) reported that they use a personal desktop computer or laptop computer to access the internet either “Occasionally”, “Sometimes”, “Often”, or “Very Often”, and of this 61.9% (n=91) selected “Very Often”. The mean score calculated for this response was the highest (4.4218) in the survey.

Smartphones are also popular devices used to access the internet, with a mean score of 3.6531. A considerable number of respondents (87%) use smartphones to access the internet, and 40.1% (n=59) of these access the internet “Very Often” using the device. Tablet devices (e.g., iPad, Xoom, Galaxy Tab, Galaxy Note, etc.) were recorded less than other devices used to access the internet (mean score = 1.23042). However, more than half of respondents use tablet devices to access the internet

(56%, n=82) compared to 44% (n=65) who had never used tablet devices to access the internet.

Table 6.4 Frequency of Using Four Categories of Devices in Accessing the Internet

	Frequency and Percentage					Total	Mean
	Never use	Occasionally	Sometimes	Often	Very Often		
Personal desktop computer or laptop computer	0.7% (1)	4.1% (6)	9.5% (14)	23.8% (35)	<b>61.9%</b> <b>(91)</b>	147	4.421
Smart phone (e.g., iPhone, Blackberry, Galaxy, etc.)	12.9% (19)	10.2% (15)	15.6% (23)	21.1% (31)	<b>40.1%</b> <b>(59)</b>	147	3.653
Mini-laptop, Netbook, or handheld computer	<b>33.3%</b> <b>(49)</b>	21.8% (32)	17.0% (25)	13.6% (20)	14.3% (21)	147	2.537
Tablet device (e.g., iPad, Xoom, Galaxy Tab, Galaxy note, etc.)	<b>44.2%</b> <b>(65)</b>	19.0% (28)	24.5% (36)	5.4% (8)	6.8% (10)	147	2.115

The results reported in Table 6.4 indicate that personal desktop computers or laptop computers and smartphones (e.g., iPhone, Blackberry, etc.) are commonly used by respondents to access the internet. Smartphones have increased Omani society's dependence on technology, and many people use smartphones in their daily life for entertainment purposes, to enjoy apps, videos, group games, movies, and music. As indicated in Chapter 2, almost 92% of internet users own a smartphone and there is widespread use of the latest smartphone handsets. With regard to the number of hours that they use the internet, 42% (n=61) of respondents spend around 0–10 hours using the internet per week; 28% (n=41) spend around 11–15 hours per week; and 22% (n=32) spend around 16–15 hours per week. Only 9% (n=13) spend more than 20 hours per week on the internet (see Figure 6.4).

Figure 6.4 Time Spent on the Internet

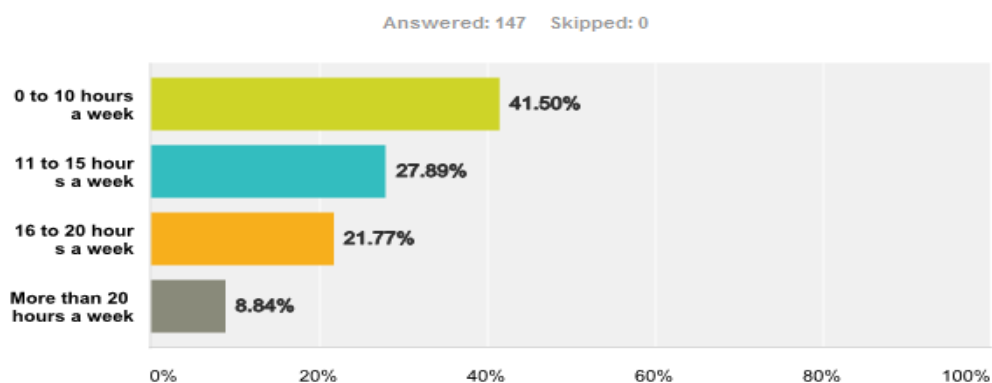




Table 6.5 illustrates the main way in which respondents accessed the internet. Most respondents (44.2%, n=65) used a laptop computer with a mobile internet connection as their main way to access the internet; 27% (n=39) used a mobile phone or a tablet device with an internet connection (Wi-Fi over ADSL); 12% (n=17) used either a desktop or laptop computer with an ADSL internet connection and a mobile phone or tablet device with a mobile internet connection. Only 6% (n=9) used either a desktop or laptop computer with a dial-up internet connection. As mentioned in Chapter 2 mobile networks are the preferred delivery method for content in Oman, and 91% of internet users having mobile internet connection.

Table 6.5 Main Methods of Accessing the Internet

	Response Percent	Total
Using your laptop computer with a mobile internet connection	44.2%	65
Using your mobile phone or a tablet device with (Wi-Fi over ADSL) internet connection.	26.5%	39
Using either your desktop computer or laptop computer with an Asymmetric Digital Subscriber Line (ADSL) internet connection.	11.6%	17
Using your mobile phone or a tablet device with a mobile internet connection	11.6%	17
Using either your desktop computer or laptop computer with (dial up) internet connection	6.1%	9
None of them	0.0%	0

In terms of where they accessed the internet (Table 6.6), over half of the respondents (51%, n=75) reported that they accessed the internet from university. It is university policy to allow all female students to stay on campus, where the internet is provided freely by SQU. This explains why most of the students preferred using the internet on campus. The students also tend to use the internet in the main library and labs, and they use the SQU facilities (computer labs and classrooms) for accessing the internet.

Table 6.6 Location of Internet Access

	Frequency	Total
I access the internet at my place of work	7.5%	11
I access the internet at my place of education (the university)	51.0%	75
I access the internet at my home/accommodation	37.4%	55
I access the internet at a free public location (library, etc.)	3.4%	5
I access the internet at a paid public location (cybercafé)	0.7%	1
Total	100.0	147

### 6.2.3 Learning Management Systems Use

Respondents were required to indicate whether they taken a class that used LMSs (such as WebCT, Blackboard, or Moodle). Nearly three quarters (74%, n=109) of the respondents had used an LMS, whereas 26% (n=38) reported that they have not used an LMS. Thus the majority of respondents have taken a class that used an LMS. The university encourages all academics to use Moodle for teaching, and it offers many workshops for updating their information regarding Moodle. Most academics use the basic characteristics of Moodle within their courses, for uploading course materials, assignments, etc. Only two academics had never used Moodle or other LMSs.

In order to measure the respondents' skill levels regarding an LMS (Moodle), respondents were requested to report their skills (self-assessed) according to eight activities as shown in Table 6.7. The purpose of these activities was to evaluate the respondents' familiarity with the use of LMSs in learning.

Table 6.7 Respondents' skill Levels Regarding LMSs-ranked

	Very Poor	Poor	Average	Good	Excellent	Total	Mean
Accessing course/subject materials	2.8% (3)	1.8% (2)	14.7% (16)	33.0% (36)	<b>47.7%</b> <b>(52)</b>	109	4.211
Regularly engaging with studies	2.8% (3)	11.0% (12)	34.9% (38)	<b>38.5%</b> <b>(42)</b>	12.8% (14)	109	3.477
Accessing external links & resources (outside LMS)	8.3% (9)	11.0% (12)	27.5% (30)	<b>33.0%</b> <b>(36)</b>	20.2% (22)	109	3.458
Collaborating with students	3.7% (4)	12.8% (14)	<b>32.1%</b> <b>(35)</b>	<b>37.6%</b> <b>(41)</b>	13.8% (15)	109	3.449
Engaging in discussions (through posting and reading)	2.8% (3)	14.7% (16)	<b>34.9%</b> <b>(38)</b>	<b>34.9%</b> <b>(38)</b>	12.8% (14)	109	3.403
Having a sense of community with other students	6.4% (7)	14.7% (16)	<b>31.2%</b> <b>(34)</b>	<b>29.4%</b> <b>(32)</b>	18.3% (20)	109	3.385
Communicating with students	8.3% (9)	19.3% (21)	<b>28.4%</b> <b>(31)</b>	<b>22.0%</b> <b>(24)</b>	<b>22.0%</b> <b>(24)</b>	109	3.302
Doing quizzes	<b>33.0%</b> <b>(36)</b>	<b>25.7%</b> <b>(28)</b>	16.5% (18)	16.5% (18)	8.3% (9)	109	2.412

As indicated in Table 6.7, the activity which respondents reported having the higher skills with was 'Accessing course/subject materials' with 80.6% (n=88) out of 109 respondents describing themselves as either "Good" or "Excellent". More than half of the respondents described themselves as either "Good" or "Excellent" in regards

to the statements: ‘regularly engaging with studies’ (51.3%, n=56), ‘accessing external links & resources outside LMS’ (53%, n=58), and ‘collaborating with students’ (51.4%, n=56). This might also indicate that academics use LMS basically for uploading course materials. It is important to note that half of the respondents (58.7%, n=64) explained their skills in “doing quizzes” as either “Poor” or “Very Poor”. This might be due in part to having less cause to undertake this activity, as most academics tend not to use LMSs for doing quizzes or examinations. In other words, in students’ answers to questions related to the first five activities, they were positive overall about their skills in using LMS, but not quite as positive about online quizzes.

As indicated in Table 6.8, more than half of the respondents (58.7%, n=64) described themselves as either “Good” or “Excellent” in using LMSs, while only 13.8% (n=15) described themselves as either “Poor” or “Very Poor” in using LMSs. This suggests that many students have higher skills in using LMSs.

Table 6.8 Overall Skills in Using LMSs

	No opinion	Very Poor	Poor	Average	Good	Excellent	Response
Overall skills in using LMS	1.8% (2)	2.8% (3)	11.0% (12)	25.7% (28)	<b>48.6% (53)</b>	10.1% (11)	109

## 6.2.4 Web 2.0 and Online Tools

### 6.2.4.1 The ‘Web 2.0’ Phenomenon

In Part B of the questionnaire, respondents were asked six questions regarding ‘Web 2.0’ concepts and related activities. The first two questions (B 1 and B 2) were posted to find the awareness of the respondents of the ‘Web 2.0’ label. The following question was asked: ‘Are you aware of the term Web 2.0?’. The majority of respondents (67.35%, n= 99) out of 147 were aware of the term, and 32.65% (n=48) were unaware of the term.

Table 6.9 below illustrates the list of descriptive words used to describe ‘Web 2.0’. The respondents who were aware of the term ‘Web 2.0’ (who answered yes) were

asked to describe this phenomenon according to their understanding and based on thirteen descriptive words regarding ‘Web 2.0’ cited in the literature. A scale of 1 to 5 was used to explore their perception toward these descriptive words as (1) being extremely descriptive words; (2) somehow descriptive words; (3) neither descriptive or non-descriptive words; (4) somehow non-descriptive words; and (5) being extremely non-descriptive words. The respondents were asked to sign (0) where they had no opinion.

Table 6.9 Descriptive Words of Web 2.0

	No opinion	Extremely descriptive words	Somehow descriptive words	Neither descriptive or non-somewhat descriptive words	Somehow non-descriptive words	Extremely non-descriptive words	Total
Ease of use	4.1% (4)	<b>27.6%</b> (27)	<b>26.5%</b> (26)	20.4% (20)	12.2% (12)	9.2% (9)	98
More active participation in the Web	7.1% (7)	<b>27.6%</b> (27)	<b>24.5%</b> (24)	16.3% (16)	15.3% (15)	9.2% (9)	98
Ability to create and update content	5.1% (5)	<b>33.7%</b> (33)	<b>22.4%</b> (22)	13.3% (13)	18.4% (18)	7.1% (7)	98
Ability to share information	4.1% (4)	<b>36.7%</b> (36)	<b>19.4%</b> (19)	14.3% (14)	14.3% (14)	11.2% (11)	98
Remixing or mashups of information	5.1% (5)	<b>26.5%</b> (26)	<b>24.5%</b> (24)	19.4% (19)	20.4% (20)	4.1% (4)	98
Transparency	13.3% (13)	<b>20.4%</b> (20)	<b>20.4%</b> (20)	<b>24.5%</b> (24)	14.3% (14)	7.1% (7)	98
The web as platform for services	11.2% (11)	<b>23.5%</b> (23)	<b>21.4%</b> (21)	19.4% (19)	13.3% (13)	11.2% (11)	98
Collaboration	7.1% (7)	<b>26.5%</b> (26)	18.4% (18)	18.4% (18)	<b>19.4%</b> (19)	10.2% (10)	98
Communication	8.2% (8)	<b>25.5%</b> (25)	<b>23.5%</b> (23)	15.3% (15)	11.2% (11)	16.3% (16)	98
Social software	11.2% (11)	<b>30.6%</b> (30)	17.3% (17)	13.3% (13)	12.2% (12)	15.3% (15)	98
Social networks	12.2% (12)	<b>30.6%</b> (30)	14.3% (14)	8.2% (8)	17.3% (17)	17.3% (17)	98
Collective intelligence	12.2% (12)	19.4% (19)	<b>20.4%</b> (20)	17.3% (17)	<b>23.5%</b> (23)	7.1% (7)	98
Freedom	9.2% (9)	<b>22.4%</b> (22)	19.4% (19)	<b>21.4%</b> (21)	12.2% (12)	15.3% (15)	98

More than 30% of the respondents rated ‘ability to create and update content’, ‘ability to share information’, ‘social software’, and ‘social networks’ as “extremely descriptive words” for the term ‘Web 2.0’. More than 40% of the respondents

reported that 'ease of use'; 'more active participation in the Web'; 'remixing or mash-ups of information'; 'the web as platform for services'; 'communication'; 'ability to create and update content'; and 'ability to share information' as either "extremely descriptive words" or "somehow descriptive words" of 'Web 2.0'.

This data revealed uncertainty in defining 'Web 2.0' and a lack of consensus about the 'Web 2.0' concept among respondents. For example, 45% of the respondents indicated that 'collaboration' was the best characteristic to describe 'Web 2.0'; 30% of them indicated that this word is either "somehow non-descriptive" or "extremely non-descriptive", where 18% indicated that this word is neither "descriptive" or "non-descriptive"; and 8% had no opinion regarding this description. However, half of the respondents reported that ('information sharing', 'creating content', 'more active participation in the Web', and 'remixing or mashups of information') are appropriate words to describe 'Web 2.0'. Review of the literature in Chapter 3 support these results as shown in section 3.2.1 which indicated that 'Web 2.0' was described in different ways and there was an ambiguity around its exact meaning, nature and scope.

In question B 3, respondents were asked to indicate their level of knowledge/practice of ten online activities. A scale of five values was used to measure the respondents' responses: (1) "not heard of it"; (2) "know about it but don't do it"; (3) "have done it but don't anymore"; (4) "do it, but it is not a major aspect of my internet use"; and (5) "do it, and it is a major part of using the internet". As indicated in Table 6.10, among these internet activities, 'online video (e.g., YouTube, includes watching and sharing video)' recorded the highest mean score (4.3310), followed by 'uploading/managing photos online' (mean=3.9296). More than half of the respondents reported their level of knowledge/practice either as "a major part" or "not a major aspect" of their internet usage of the following activities: 'online video' 86.6% (n=123); 'uploading/managing photos online' 74.7% (n=106), and 'using social networking' 65.5% (n=93). In contrast, more than half of the respondents selected either "not heard of it", "know about it but don't do it" for the items: 'social bookmarking such as Delicious' (57.85, n=82); 'listening to podcasts' (64.8, N=92); 'RSS such as syndication of content; (71.8%, n=102), and 'creating or writing in a wiki' (78.9%, n=112).

Table 6.10 Level of Knowledge/Practice of Ten Online Activities (ranked)

	not heard of it	know about it, but don't do it	have done it, but don't anymore	do it, but it is not a major aspect of my internet use	do it, and it is a major part of using the internet	Total	Mean
Online Video, watching and sharing video (e.g., YouTube)	1.4% (2)	6.3% (9)	5.6% (8)	<b>31.0%</b> (44)	<b>55.6%</b> (79)	142	4.331
Uploading/managing photos online	3.5% (5)	15.5% (22)	6.3% (9)	<b>33.8%</b> (48)	<b>40.8%</b> (58)	142	3.929
Using a social networking	2.1% (3)	16.2% (23)	16.2% (23)	<b>33.8%</b> (48)	<b>31.7%</b> (45)	142	3.767
Blogging (writing a blog, not just reading them)	2.1% (3)	18.3% (26)	<b>40.1%</b> (57)	<b>33.1%</b> (47)	6.3% (9)	142	3.232
Using discussion forums (not in an LMS)	6.3% (9)	<b>25.4%</b> (36)	<b>25.4%</b> (36)	<b>29.6%</b> (42)	13.4% (19)	142	3.183
Document sharing (e.g., SlideShare)	<b>17.6%</b> (25)	<b>30.3%</b> (43)	12.7% (18)	23.2% (33)	16.2% (23)	142	2.901
Social Bookmarking	<b>42.3%</b> (60)	15.5% (22)	12.7% (18)	<b>21.8%</b> (31)	7.7% (11)	142	2.373
Listening to Podcasts	<b>35.9%</b> (51)	<b>28.9%</b> (41)	15.5% (22)	14.1% (20)	5.6% (8)	142	2.246
RSS Really Simple Syndications	<b>33.8%</b> (48)	<b>38.0%</b> (54)	13.4% (19)	11.3% (16)	3.5% (5)	142	2.126
Creating or writing in a wiki	<b>32.4%</b> (46)	<b>46.5%</b> (66)	12.7% (18)	6.3% (9)	2.1% (3)	142	1.993

It is unsurprising that podcasts and RSS come low on the list of these activities while the students tend to use other applications such as YouTube as an online sharing site. It is also important to note that 41% of respondents indicated uploading and managing photos online as a major part of their use of the internet. This provides evidence that digital photo uploading and managing is popular among students. A smaller percentage of students were using the internet for social bookmarking, listening to podcasts, RSS, and creating or writing in a wiki. It is also interesting to note that 40% of students abandoned using blogs as they reported that they “have done it but don't anymore”. This suggests that the use of blogging amongst students is declining and this may be explained as students may stop blogging after a unit is over if they were blogging because of unit requirement, and students might find other alternative online tools such as SNSs. It is also the case that the use and adoption of blogging declined globally, for example, as shown by Barnes & Lescault (2012) who claimed that the adoption of blogging started to decline in 2007 among the Inc. 500

companies, with the use of blogging dropped to 37% in 2011. This phenomenon will be discussed further in Chapter 8.

Respondents were also provided with a list of seven online tools and asked to identify their level of knowledge of these tools. Again, a scale of five values was used to measure the respondents' responses: (1) "not heard of it"; (2) "know about it but don't do it"; (3) "have done it but don't anymore"; (4) "do it, but it is not a major aspect of my internet use"; and (5) "do it, and it is a major part of using the internet". Among the seven online tools that are listed in Table 6.11, YouTube was reported to be used by more than half of the 147 participants as a "major part" of the internet (53.5%, n=76). The mean score calculated for this response was 4.4437. LinkedIn and Academia.edu were two online tools that had never been heard of by over half of the 142 participants (51.4% of the 142 participants reported that they had never heard about LinkedIn, 52.1% for Academia.edu).

Table 6.11 Knowledge of Online Tools (Frequency and Percentage)

Online Tools	not heard of it	know about it, but don't do it	have done it, but don't anymore	do it, but it is not a major aspect of my internet use	do it, and it is a major part of using the internet	Total	Mean
YouTube	0.0% (0)	2.8% (4)	3.5% (5)	<b>40.1%</b> <b>(57)</b>	<b>53.5%</b> <b>(76)</b>	142	4.4437
Wikipedia	4.9% (7)	20.4% (29)	5.6% (8)	<b>38.0%</b> <b>(54)</b>	<b>31.0%</b> <b>(44)</b>	142	3.6972
Facebook	2.1% (3)	26.8% (38)	19.7% (28)	<b>23.2%</b> <b>(33)</b>	<b>28.2%</b> <b>(40)</b>	142	3.4859
Google Docs	14.1% (20)	14.1% (20)	15.5% (22)	21.8% (31)	<b>34.5%</b> <b>(49)</b>	142	3.4859
Twitter	3.5% (5)	<b>58.5%</b> <b>(83)</b>	12.0% (17)	14.1% (20)	12.0% (17)	142	2.7254
LinkedIn	<b>51.4%</b> <b>(73)</b>	<b>28.2%</b> <b>(40)</b>	8.5% (12)	6.3% (9)	5.6% (8)	142	1.8662
Academia.edu	<b>52.1%</b> <b>(74)</b>	<b>28.9%</b> <b>(41)</b>	6.3% (9)	7.0% (10)	5.6% (8)	142	1.8521

It seems that the students fail to utilise professional social networking and this might be due to the nature of these tools in terms of their form, design and purpose. Professional SNSs are largely designed for people in professional occupations, and are intended to assist in finding jobs, communicating with professionals in different fields, sharing and following research. They are not the same as Facebook and other

SNSs in terms of their users (e.g., audiences). YouTube, Wikipedia, and Facebook were used by the majority of the 147 participants either as a “major part” or “not a major aspect” of the internet (over 50%). It is unsurprising that YouTube and Facebook come high on the list of these applications. As indicated in Chapter 2, YouTube, Facebook, and Google are the most popular sites among Omani people as reported by ITU (2012). YouTube was clearly recorded as the most popular site among respondents and this supports the GCC statistics provided by ITU and reported in Chapter 2. YouTube was the most popular site in Kuwait, the second most popular in Oman and KSA, and the third most popular in Bahrain and Qatar. Facebook was the second most popular site in Bahrain and Qatar and the third most popular in Kuwait, Oman, and KSA.

#### 6.2.4.2 Online Tools for Personal Versus Learning Purposes

In question B 5, respondents were asked to indicate the frequency of their online personal activities. As shown in Table 6.12, a frequency scale was used to measure the respondents' frequency of use for each of these activities. The scale used to measure frequency was: (0) “never used”; (1) “occasionally”; (2) “sometimes”; (3) “often”; and (4) “very often”.

As indicated in Table 6.12, the most common personal activity on the web was ‘to browse or search for information’ with 80% (n=114) of respondents undertaking this activity either “Often” or “Very Often”. The mean score calculated for this response was 4.3169. ‘Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)’ was recorded to be the second most frequently undertaking activity on the web with 70% (n=99) of respondents doing this either “Often” or “Very Often”. The mean score calculated for this response was 3.9930. Nearly half of the respondents used the internet for watching and sharing videos. ‘Use the internet for social networking (e.g., Facebook and MySpace)’ recorded a mean score of 2.9718 (39.5%, n=56 either “Often” or “Very Often”). Facebook was also used by students to communicate and collaborate on ideas with others (67%, n=95) with the level of use either “occasionally”, “sometimes”, “often”, or “very often”.



Table 6.12 Online Personal Activities of Respondents (ranked)

	Never used	Occasionally	Sometimes	Often	Very Often	Total	Mean
Use the web to browse or search for information (e.g., news and events)	2.1% (3)	4.9% (7)	12.7% (18)	19.7% (28)	<b>60.6%</b> <b>(86)</b>	142	4.316 9
Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	0.7% (1)	14.8% (21)	14.8% (21)	23.9% (34)	<b>45.8%</b> <b>(65)</b>	142	3.993 0
Use the internet for watching/sharing video (e.g., YouTube)	5.6% (8)	16.2% (23)	<b>29.6%</b> <b>(42)</b>	<b>20.4%</b> <b>(29)</b>	<b>28.2%</b> <b>(40)</b>	142	3.493 0
Use the web for instant messaging/chat (e.g., MSN)	13.4% (19)	<b>23.9%</b> <b>(34)</b>	<b>23.2%</b> <b>(33)</b>	12.0% (17)	<b>27.5%</b> <b>(39)</b>	142	3.162 0
Use the internet for social networking (e.g., Facebook and MySpace)	<b>23.2%</b> <b>(33)</b>	21.1% (30)	16.2% (23)	14.1% (20)	<b>25.4%</b> <b>(36)</b>	142	2.971 8
Using Facebook to communicate with and collaborate in ideas with others	<b>33.1%</b> <b>(47)</b>	14.1% (20)	20.4% (29)	15.5% (22)	16.9% (24)	142	2.690 1
Use the internet for resources making and sharing with others (e.g., delicious, wikis and blogs)	15.5% (22)	<b>40.8%</b> <b>(58)</b>	<b>22.5%</b> <b>(32)</b>	11.3% (16)	9.9% (14)	142	2.591 5
Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	<b>29.6%</b> <b>(42)</b>	<b>24.6%</b> <b>(35)</b>	20.4% (29)	12.7% (18)	12.7% (18)	142	2.542 3
Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	22.5% (32)	<b>39.4%</b> <b>(56)</b>	21.8% (31)	10.6% (15)	5.6% (8)	142	2.373 2
Use the internet in collaborating in ideas (e.g., wikis and blogs)	26.1% (37)	31.7% (45)	27.5% (39)	8.5% (12)	6.3% (9)	142	2.373 2
Using Twitter for finding and following people activities	<b>56.3%</b> <b>(80)</b>	14.1% (20)	11.3% (16)	9.9% (14)	8.5% (12)	142	2.000 0
Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)	<b>71.8%</b> <b>(102)</b>	9.9% (14)	7.7% (11)	7.0% (10)	3.5% (5)	142	1.605 6

The result above is supported by the data in Table 6.11 which indicates that more than 50% of respondents use Facebook either as “major part” or “not a major aspect” of the internet. The lowest mean score (1.6056) was recorded for ‘using Academia.edu and/or LinkedIn for collaboration’ with 72% (n=102) of respondents never using this feature, and 56% (n=80) reporting that they had never used Twitter for finding and following people’s activities. As shown in Table 6.11, half of the respondents had never heard of LinkedIn or Academia.edu, and this correlates with the low frequency of use recorded for this activity.

In question B 6, respondents were asked to indicate their frequency of online learning activities, as reported in Table 6.13. These are the same activities provided in Table 6.12; however, the goal here was to explore their frequency of use for learning activities. Again, a frequency scale was used to measure the respondents’

practice of each of these activities. The scale used to measure these activities was: (0) “never used”; (1) “occasionally”; (2) “sometimes”; (3) “often”; and (4) “very often”.

Table 6.13 Online Learning Activities of Respondents (ranked)

	Never used	Occasionally	Sometimes	Often	Very Often	Total	Mean
Use the web to browse or search for information (e.g., news and events)	1.4% (2)	5.6% (8)	9.2% (13)	19.7% (28)	<b>64.1%</b> <b>(91)</b>	142	4.3 944
Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	0.7% (1)	7.0% (10)	16.9% (24)	<b>27.5%</b> <b>(39)</b>	<b>47.9%</b> <b>(68)</b>	142	4.1 479
Use the web to access a portal, learning management system	5.6% (8)	9.2% (13)	16.2% (23)	<b>22.5%</b> <b>(32)</b>	<b>46.5%</b> <b>(66)</b>	142	3.9 507
Use the internet for watching/sharing video (e.g., YouTube)	12.7% (18)	21.1% (30)	<b>24.6%</b> <b>(35)</b>	<b>20.4%</b> <b>(29)</b>	21.1% (30)	142	3.1 620
Use the web for instant messaging/chat (e.g., MSN)	<b>26.8%</b> <b>(38)</b>	<b>24.6%</b> <b>(35)</b>	19.7% (28)	11.3% (16)	17.6% (25)	142	2.6 831
Use the internet for resources making and sharing with other (e.g., delicious, wikis and blogs)	22.5% (32)	<b>26.8%</b> <b>(38)</b>	<b>29.6%</b> <b>(42)</b>	12.7% (18)	8.5% (12)	142	2.5 775
Use the internet for social networking (e.g., Facebook and MySpace)	<b>35.9%</b> <b>(51)</b>	19.0% (27)	19.0% (27)	11.3% (16)	14.8% (21)	142	2.5 000
Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	<b>31.7%</b> <b>(45)</b>	<b>26.8%</b> <b>(38)</b>	17.6% (25)	14.1% (20)	9.9% (14)	142	2.4 366
Use the internet in collaborating in ideas (e.g., wikis and blogs)	<b>26.1%</b> <b>(37)</b>	<b>33.1%</b> <b>(47)</b>	20.4% (29)	14.8% (21)	5.6% (8)	142	2.4 085
Using Facebook to communicate with and collaborate in ideas with others	<b>40.8%</b> <b>(58)</b>	13.4% (19)	23.2% (33)	13.4% (19)	9.2% (13)	142	2.3 662
Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	<b>30.3%</b> <b>(43)</b>	<b>29.6%</b> <b>(42)</b>	22.5% (32)	14.1% (20)	3.5% (5)	142	2.3 099
Using Twitter for finding and following people activities	<b>66.2%</b> <b>(94)</b>	10.6% (15)	10.6% (15)	7.0% (10)	5.6% (8)	142	1.7 535
Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)	<b>70.4%</b> <b>(100)</b>	13.4% (19)	10.6% (15)	2.1% (3)	3.5% (5)	142	1.5 493

The results reported in Table 6.13 indicate that 83.8% (n=119) of respondents ‘use the web to browse or search for information’ either “Often” or “Very Often” with a mean score of 4.3944, followed by ‘use the web to send or receive email’ (75.4%, n=107), and ‘use the web to access a portal, learning management system’ (69%, n=98). The Table also indicates that 66.2%, (n=94) of respondents have never used Twitter for ‘finding and following people’s activities’ for the purpose of learning,

and 70.4% (n=100) of respondents reported that they had never used Academia.edu and/or LinkedIn for collaboration (e.g., following the latest research in their field, updating, communicating with other professionals) for the purpose of learning. This indicates nearly the same percentage of use as Twitter and Academia.edu and/or LinkedIn regarding online personal activities. Professional SNSs are not a preferred learning tool for students and it is indicated in Table 6.11 that the majority of students were unaware of these tools – more than half had not heard of them.

It can be concluded from Tables 6.12 and 6.13 that the first two items were recorded to have the highest level of activity by students for both personal and learning activities. This suggests that most of the students are primarily consumers, not producers, of web content. This is similar to Popescu's (2010) findings that most of the students are primarily consumers, not producers, of web content. It is also important to note that 94.4% of respondents use the internet for watching and sharing video for personal uses, compared with 87.2% of them using the internet for watching and sharing video for learning uses, with the level of use either "occasionally", "sometimes", "often", or "very often". Overall, online video sites including YouTube were used for personal purposes more frequently than learning purposes.

Comparison of the Means for personal and learning uses was performed in order to compare between these activities (Table 6.14). Respondents practiced three activities for their learning uses rather than personal uses, which were: 'to browse or search for information (e.g., news and events)'; 'to send or receive email (e.g., Hotmail, Yahoo, Gmail)'; and 'Use the internet in collaborating in ideas (e.g., wikis and blogs)'. This might indicate that the students prefer to use email for formal use (educational use), whereas they tend to use SNSs such as Facebook and similar online tools for personal use (informal use). In other words, SNSs including Facebook were used for personal communication purposes rather than learning purposes.

Table 6.14 Comparison of Means for Learning and Personal Activities

	Personal Activities	Learning Activities
	Mean	
1. Use the web to browse or search for information (e.g., news and events)	4.3169	<4.3944
2. Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	3.9930	< 4.1479
3. Use the web for instant messaging/chat (e.g., MSN)	3.1620	>2.683
4. Use the internet for social networking (e.g., Facebook and MySpace)	2.9718	> 2.5000
5. Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	2.5423	> 2.4366
6. Use the internet for resources making and sharing with others (e.g., delicious, wikis and blogs)	2.5915	> 2.5775
7. Use the internet for watching/sharing video (e.g., YouTube)	3.4930	> 3.1620
8. Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	2.3732	> 2.3099
9. Use the internet in collaborating on ideas (e.g., wikis and blogs)	2.3732	< 2.4085
10. Using Facebook to communicate with and collaborate in ideas with others	2.6901	> 2.3662
11. Using Twitter for finding and following people activities	2.0000	> 1.7535
12. Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)	1.6056	> 1.5493

## 6.2.5 Online Tools for Learning

### 6.2.5.1 Students Preference of Studying and Learning Style

In question C 1, respondents were asked to indicate their level of preference for studying in four situations as indicated in Table 6.15, where 1 = “strong preference against”, 4 = “strong preference in favor”, and ‘0’ for those who have no opinion. More than half of the respondents (64.3%, n=64) preferred taking classes that involve some formal use of the internet (e.g., email, browsing, and searching) in the classroom while only 32.1% (n=45) of them preferred taking classes that are delivered entirely “online” with no required face-to-face interaction. It is also important to note that 47.8 (n=67) of respondents preferred taking classes that involve use of the internet extensively in the classroom, and 48.5 (n=68) of them preferred taking classes that involve no formal use of the internet in the classroom.

Table 6.15 Respondents' Preference of Studying (Frequency and Percentage)

	<b>1 Strong preference against</b>	<b>2</b>	<b>3</b>	<b>4 Strong preference in favor</b>	<b>No opinion</b>	<b>Total</b>
I prefer taking classes that involve some formal use of the internet (e.g., email, browsing and searching) in the classroom	15.0% (21)	16.4% (23)	<b>22.9%</b> <b>(32)</b>	<b>41.4%</b> <b>(58)</b>	4.3% (6)	140
I prefer taking classes that involve use of the internet extensively in the classroom (basically depend on the internet via using different types of internet applications)	20.7% (29)	21.4% (30)	<b>16.4%</b> <b>(23)</b>	<b>32.1%</b> <b>(45)</b>	9.3% (13)	140
I prefer taking classes that involve no formal use of the internet in the classroom (internet as a facilitating tool to courses)	26.4% (37)	20.0% (28)	<b>25.7%</b> <b>(36)</b>	<b>22.1%</b> <b>(31)</b>	5.7% (8)	140
I prefer taking classes that are delivered entirely "online" with no requirement for face to face interactions	<b>35.7%</b> <b>(50)</b>	17.9% (25)	15.0% (21)	17.1% (24)	14.3 % (20)	140

Respondents were also asked to describe their preferred learning style. Table 6.16 illustrates the preferred learning style of students. The majority of respondents (71.4%, n=100) preferred to learn either by working in a group or independently. Only 11 of the respondents preferred to learn by working independently. This was an expected result, as in the Omani environment students are used to working in a group for some courses and assignments and they prefer to work independently for others.

Table 6.16 Respondents' Preferred Learning Style (Frequency and Percentage)

	<b>Male</b>	<b>Female</b>	<b>Frequency and Percentage)</b>	<b>Valid</b>
1. I prefer to learn by working independently	2.7% (1)	7.9% (10)	7.9% (11)	7.9
2. I prefer to learn by working in a group rather than independently	40.5% (15)	13.6% (14)	20.7% (29)	20.7
3. I prefer to learn either by working in a group or independently	56.8% (21)	76.7% (79)	71.4% (100)	71.4
Total	37	103	140 (95.2)	100.0
System Missing			7	

#### 6.2.5.2 Students' Attitude Toward Using Online Tools within LIS Courses

In question C 3, seven propositions were put to respondents regarding their attitude toward learning LIS courses with the use of various online tools (Table 6.17). A five-point scale was used, where 1 = "Strongly Disagree"; 2 = "Disagree"; 3 = "Neither";

4 = “Agree”; and 5 = “Strongly Agree”, and respondents were asked to sign “0” if they had no opinion.

Table 6.17 Attitudes Toward Learning LIS Courses Using Various Online Tools (ranked)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	No Opinion	valid	Mean
Overall, using various internet applications allows me to prepare myself in future job market.	1.4% (2)	2.1% (3)	7.9% (11)	<b>39.3%</b> <b>(55)</b>	<b>47.9%</b> <b>(67)</b>	1.4% (2)	140	4.25 7
Using various internet applications improves my collaboration with others	2.9% (4)	7.1% (10)	16.4% (23)	<b>50.0%</b> <b>(70)</b>	<b>23.6%</b> <b>(33)</b>	0.0% (0)	140	3.84 2
Using various internet applications makes me competitive in seeking employment	0.7% (1)	7.1% (10)	24.3% (34)	<b>30.7%</b> <b>(43)</b>	<b>32.9%</b> <b>(46)</b>	4.3% (6)	140	3.75 0
YouTube supports my understanding of LIS field (e.g., information services, information organisations, information management etc.)	2.9% (4)	9.3% (13)	18.6% (26)	<b>45.0%</b> <b>(63)</b>	<b>22.1%</b> <b>(31)</b>	2.1% (3)	140	3.67 8
Facebook facilitates my collaboration with others (e.g., information professionals/librarians)	6.4% (9)	10.7% (15)	<b>28.6%</b> <b>(40)</b>	<b>34.3%</b> <b>(48)</b>	16.4% (23)	3.6% (5)	140	3.32 8
Twitter helps me to collaborate with others by following and finding other people activities (e.g., Information professionals/librarians)	6.4% (9)	10.7% (15)	<b>33.6%</b> <b>(47)</b>	<b>22.9%</b> <b>(32)</b>	14.3% (20)	12.1% (17)	140	2.91 4
LinkedIn and/or Academia.edu enable me to learn more through collaboration with others.	7.1% (10)	10.0% (14)	<b>37.9%</b> <b>(53)</b>	<b>18.6%</b> <b>(26)</b>	7.9% (11)	18.6% (26)	140	2.54 2

Responses indicate that 87.2% of participants either “Agree” or “Strongly Agree” with the proposition that ‘using various internet applications allows me to prepare myself in future job market’. More than 60% of students either “Agree” or “Strongly Agree” with the proposition: ‘using various internet applications improves my collaboration with others’ (73.6%, n=103), ‘using various internet applications makes me competitive in seeking employment’ (63.6%, n=89) and ‘YouTube supports my understanding of LIS field (e.g., information services, information organisations, information management, etc.)’ (67.1%, n=94). Half of the students (50.7%, n=71) stated that Facebook facilitates their collaboration with others (either “Agree” or “Strongly Agree”). Only less than 40% of students chose to “Agree” or “Strongly Agree” with the last proposition that ‘Twitter helps me to collaborate with others by following and finding other people activities’ (37.2%, n=52), and

'LinkedIn and/or Academia.edu enable me to learn more through collaboration with others' (26.5%, n=37).

As reported in Table 6.11, the majority of the students were unaware of Twitter, LinkedIn, and Academia.edu. It can be seen that students' attitudes towards such activities are mostly positive in terms of allowing them to prepare themselves for the future job market, improving their collaboration with others, and making them competitive in seeking employment. Most students reported a positive attitude regarding collaboration and communication with these tools.

#### 6.2.5.3 Students' Beliefs regarding Using Various Online Tools in the Future Workplace

In question C 4, similar propositions were put to respondents regarding their belief in the value of various online tools in the future workplace, using the same scale. From the results in Table 6.18, it can be seen that 82.9 % (n=116) of 140 participants either "Agree" or "Strongly Agree" with the proposition that 'using various internet applications would allow me to survival in job market'. The mean score calculated for this response was 4.207. Also, 80.7% (n=113) of participants reported that they either "Agree" or "Strongly Agree" with the proposition 'Using various internet applications would make me competitive in seeking employment', and 77.8 (n=109) of participants reported that they either "Agree" or "Strongly Agree" with the proposition 'Using various internet applications would improve my collaboration with others'.

The majority of students possessed a positive belief in the role of these tools in the job market. More than half of the participants (71.4%, n=100) believed that YouTube would support their understanding of the LIS field; 60.7% (n=85) believed that Facebook would facilitate their collaboration with others in the future workplace. It can be concluded that the majority of the students are likely to have positive beliefs about using these online tools in the future.

Table 6.18 Students' Belief in the value of Using Various Online Tools in the Future Workplace (ranked)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	No Opinion	valid	Mean
Overall, using various internet applications would allow me to survive in job market.	1.4% (2)	1.4% (2)	12.1% (17)	<b>34.3%</b> <b>(48)</b>	<b>48.6%</b> <b>(68)</b>	2.1% (3)	140	4.207
Using various internet applications would make me competitive in seeking employment	0.7% (1)	1.4% (2)	16.4% (23)	<b>45.7%</b> <b>(64)</b>	<b>35.0%</b> <b>(49)</b>	0.7% (1)	140	4.107
Using various internet applications would improve my collaboration with others	2.1% (3)	2.9% (4)	17.1% (24)	<b>46.4%</b> <b>(65)</b>	<b>31.4%</b> <b>(44)</b>	0.0% (0)	140	4.021
YouTube would support my understanding of IS field (e.g., information services, information organisations, etc.)	3.6% (5)	6.4% (9)	17.9% (25)	<b>44.3%</b> <b>(62)</b>	<b>27.1%</b> <b>(38)</b>	0.7% (1)	140	3.828
Facebook would facilitate my collaboration with others (e.g., Information professionals/librarians)	5.0% (7)	7.1% (10)	24.3% (34)	<b>40.7%</b> <b>(57)</b>	<b>20.0%</b> <b>(28)</b>	2.9% (4)	140	3.550
Twitter would help me to collaborate with others by following and finding other people activities (e.g., Information professionals/librarians)	6.4% (9)	7.1% (10)	<b>28.6%</b> <b>(40)</b>	<b>32.1%</b> <b>(45)</b>	17.1% (24)	8.6% (12)	140	3.207
LinkedIn and/or Academia.edu would enable me to learn more through collaboration with others.	3.6% (5)	10.7% (15)	<b>36.4%</b> <b>(51)</b>	<b>27.9%</b> <b>(39)</b>	9.3% (13)	12.1% (17)	140	2.921

#### 6.2.5.4 Online Tools and Traditional Methods

As indicated in Table 6.19 below, five propositions were put to respondents regarding their attitude toward using various online tools in learning compared to other methods. Results indicate that 70% (n=98) of participants either “Agree” or “Strongly Agree” with the proposition that ‘Using various internet applications improves my participations and contributions in my LIS courses as compared to other methods’. Only 6.4% (n=9) selected “Strongly Disagree” or “Disagree”, and 21.4% (n=30) reported “Neither” regarding this proposition. The results from the table also indicate that 60.7% (n=85) either “Agree” or “Strongly Agree” with the proposition that ‘using various internet applications allows me to communicate more effectively compared to other methods (e.g., face-to-face meeting and learning management system)’ and 60% (n=84) either “Agree” or “Strongly Agree” with the proposition that ‘Using various internet applications allows me to collaborate in my



course more effectively as compared to other methods (e.g., face-to-face meeting and learning management system)'; which focuses on communication and collaboration.

Table 6.19 Attitudes toward Using Various Online Tools in Learning Compare to Other Methods (ranked)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	No Opinion	Valid	Mean
Using various internet applications improves my participations and contributions in my LIS course as compared to other methods (e.g., face to face meeting and learning management system)	2.1% (3)	4.3% (6)	21.4% (30)	<b>50.7%</b> <b>(71)</b>	19.3% (27)	2.1% (3)	1 4 0	3.74 2
Using various internet applications allows me to communicate more effectively compared to other methods (e.g., face to face meeting and learning management system)	5.0% (7)	12.9% (18)	20.7% (29)	<b>39.3%</b> <b>(55)</b>	<b>21.4%</b> <b>(30)</b>	0.7% (1)	1 4 0	3.57 1
Using various internet applications allows me to collaborate in my course more effectively as compared to other methods (e.g., face to face meeting and learning management system)	2.9% (4)	12.9% (18)	<b>23.6%</b> <b>(33)</b>	<b>45.0%</b> <b>(63)</b>	15.0% (21)	0.7% (1)	1 4 0	3.54 2
I prefer to use various internet applications in my courses rather than other methods (e.g., face to face meeting and learning management system)	5.0% (7)	<b>20.0%</b> <b>(28)</b>	18.6% (26)	<b>37.1%</b> <b>(52)</b>	17.1% (24)	2.1% (3)	1 4 0	3.35 00
Using various internet applications distracts my learning LIS courses.	7.1% (10)	<b>25.7%</b> <b>(36)</b>	<b>25.0%</b> <b>(35)</b>	<b>25.7%</b> <b>(36)</b>	13.6% (19)	2.9% (4)	1 4 0	3.04 29

Student attitudes towards using online tools within a course were mostly positive. Students perceived using these applications as supplementary to the curriculum. Most students indicate a belief that communication, collaboration, and participation activities are improved and more effective when using these online tools in their courses compared with traditional LMSs and face-to-face meetings. This provides evidence of the effectiveness of these online tools in teaching and learning in regards to communication and collaboration activities.

It is also notable that, 39.3% (n=55) of respondents either “Agree” or “Strongly Agree” with the proposition that ‘Using various internet applications distracts my learning in LIS courses’. This result may be explained by the fact that various online tools such as Facebook are used for personal purposes, and may be distracting

students from doing their classroom homework and assignment. In the classroom, students may use online tools for “chatting” with other users and ‘checking’ their account, such as Facebook. This may distract the student from the course objectives. Students are thus clearly separating social and educational uses, even though the social uses may themselves lead to positive educational outcomes such as social cohesiveness amongst learners. It is also interesting to note that around 20% of the respondents reported ‘either’ with the five propositions listed in above table. This result may indicate that those respondents prefer a combination of online tools and other methods include LMS and face to face meeting.

### ***6.2.6 Incentives/Factors and Barriers/Difficulties to Online Tools Use***

#### **6.2.6.1 Incentives/Factors to Use and Adopt Online Tools**

In question D 1, respondents were asked to indicate their motivations/factors in using and adopting online tools (Table 6.20). They were provided with a list of propositions in order to indicate their perceived importance, using the scale of 1 = “Extremely unimportant”; 2 = “Very unimportant”; 3 = “Somewhat unimportant”; 4 = “Neither important nor unimportant”; 5 = “Somewhat important”; 6 = “Very important”, and 7 = “Extremely important”, to describe their response to the nine propositions.

Learning new things by using the internet was the factor indicated as being of the greatest importance by the respondents (mean=5.8929). This response likely relates to the availability of communication devices such as smartphones which have facilitated the use of various online tools such as Facebook and Twitter (mean=5.7071). These features and characteristics were not available for cell phones (not smartphones). With these communication devices, users can browse and use the internet when networks are available. When comparing this result with the results in Table 6.4, the majority of students (87%) access the internet via smartphones and 40.1% (n=59) of them access the internet “very often”. It can also be noted that the development of ICT in Omani society might contribute to student use of various online tools, while 77.9% (n=109) of them reported this as a factor in utilising online tools as either “somewhat important”; “very important”; or “extremely important”.

Table 6.20 Perceived Importance Toward Online Tools (ranked)

	Extremely unimportant	Very unimportant	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Very important	Extremely important	No Opinion	valid	Mean
Using the internet allow me for learning new things	0.7% (1)	1.4% (2)	4.3% (6)	2.9% (4)	17.9% (25)	<b>27.9% (39)</b>	<b>43.6% (61)</b>	1.4% (2)	14 0	5.89 29
The availability of communication devices such as smart phones.	1.4% (2)	2.1% (3)	5.7% (8)	10.0% (14)	15.0% (21)	<b>27.1% (38)</b>	<b>38.6% (54)</b>	0.0% (0)	14 0	5.70 71
ICT development in my society force me to use various internet applications	0.7% (1)	3.6% (5)	4.3% (6)	11.4% (16)	19.3% (27)	<b>28.6% (40)</b>	<b>30.0% (42)</b>	2.1% (3)	14 0	5.44 29
Most of various internet applications are free	2.1% (3)	2.1% (3)	7.1% (10)	13.6% (19)	<b>24.3% (34)</b>	<b>25.7% (36)</b>	<b>23.6% (33)</b>	1.4% (2)	14 0	5.22 86
I use the internet for entertainment	1.4% (2)	2.9% (4)	9.3% (13)	17.1% (24)	20.7% (29)	<b>22.1% (31)</b>	<b>25.0% (35)</b>	1.4% (2)	14 0	5.15 00
Most of various internet applications are flexible	0.0% (0)	3.6% (5)	4.3% (6)	20.7% (29)	<b>30.0% (42)</b>	<b>22.1% (31)</b>	17.9% (25)	1.4% (2)	14 0	5.10 71
Most of various internet applications are easy to use	1.4% (2)	3.6% (5)	7.1% (10)	15.7% (22)	<b>27.9% (39)</b>	<b>27.9% (39)</b>	15.7% (22)	0.7% (1)	14 0	5.09 29
Using the internet allows me to collaborate with others	0.7% (1)	8.6% (12)	7.9% (11)	21.4% (30)	10.7% (15)	<b>28.6% (40)</b>	<b>22.1% (31)</b>	0.0% (0)	14 0	5.07 14
I use the internet to find, maintain, or end relationships	<b>25.0% (35)</b>	<b>20.7% (29)</b>	7.9% (11)	17.1% (24)	12.9% (18)	7.9% (11)	7.9% (11)	0.7% (1)	14 0	3.25 00

Nearly half of the respondents (49.3%, n=69) rate the statement, ‘Most of various internet applications are free’ as either extremely important or very important. This suggests that it is a characteristic of online tools that motivates students to use them. The proposition, ‘I use the internet to find, maintain, or end relationships’ was reported to be a less important factor contributing to adoption and use of online tools, while half of the students (53.6%, n=75) reported this as “extremely unimportant”, “very unimportant”, or “somewhat unimportant”. This differs from the results of Sheldon (2009) and Mazman and Usluel (2011) who found that maintaining existing relationships, and making new relationships were the main use of Facebook. Chapter 8 will discuss this issue in more detail.

### 6.2.6.2 Barriers/Difficulties in Shaping Online Tools

The questionnaire also asked respondents to indicate the challenges or barriers to using and adopting online tools, again using a scale of 1 to 7, where 1 = “Extremely unimportant”; 2 = “Very unimportant”; 3 = “Somewhat unimportant”; 4 = “Neither important nor unimportant”; 5 = “Somewhat important”; 6 = “Very important”; and 7 = “Extremely important”, to describe to response to fifteen possible barriers and/or challenges (Table 6.21).

The proposition ‘internet is slow’ was reported to be the most important factor in adoption and using online tools with a very high mean score (5.7286). The majority of respondents (80%, n=112) reported this as “somewhat important”, “very important”, or “extremely important”. Also, as indicated in Table 6.21, half of the respondents (50%, n=70) reported this as an “extremely important” factor.

There were three other important factors related to the internet and telecommunication companies were reported by more than 70% of respondents as an important factor (either “somewhat important”, “very important”, or “extremely important”), which were:

- Safety and privacy concerns (75.7%, n=106)
- Internet services are costly (70.7%, n=99)
- Internet access policies and regulations which are ruled by telecommunications companies (70.8%, n=99)

As mentioned in Chapter 2, telecommunication companies’ monopoly, high prices, and the slow speed of the internet in Oman, as well as security concerns, were important factors to adopting and using the internet, which supports the results cited in the literature. The item ‘the absence of government roles in adoption various internet applications in education’ seems to be an important factor to respondents, with 74% (n=78) of them reporting this as either “somewhat important”, “very important”, or “extremely important”.

There were only two factors recorded to be less important, which were ‘Not comfortable with the open and public nature of new technology or ‘Web 2.0’ applications’ and ‘Fear of technology’. The mean scores calculated for the responses to their propositions were 4.1429 and 4.0642, respectively.

Table 6.21 Perceived Importance toward Barriers/Challenges in Adopting Online Tools (ranked)

	Extremely unimportant	Very unimportant	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Very important	Extremely important	No Opinion	valid	Mean
Internet is slow	1.4% (2)	5.0% (7)	3.6% (5)	8.6% (12)	13.6% (19)	16.4% (23)	<b>50.0% (70)</b>	1.4% (2)	140	5.7286
The absence of government roles in adoption various internet applications in education	1.4% (2)	5.0% (7)	2.9% (4)	16.4% (23)	17.9% (25)	20.7% (29)	<b>35.0% (49)</b>	0.7% (1)	140	5.4429
Safety and privacy concerns	0.7% (1)	5.7% (8)	5.7% (8)	10.0% (14)	16.4% (23)	<b>23.6% (33)</b>	<b>35.7% (50)</b>	2.1% (3)	140	5.4286
Internet services are costly	2.1% (3)	5.0% (7)	10.0% (14)	10.0% (14)	14.3% (20)	<b>24.3% (34)</b>	<b>32.1% (45)</b>	2.1% (3)	140	5.2429
Internet access policies and regulations which ruled by telecommunications companies	2.1% (3)	6.4% (9)	5.7% (8)	13.6% (19)	17.9% (25)	<b>25.0% (35)</b>	<b>27.9% (39)</b>	1.4% (2)	140	5.2071
Lack of knowledge	2.9% (4)	4.3% (6)	9.3% (13)	14.3% (20)	19.3% (27)	<b>23.6% (33)</b>	<b>25.7% (36)</b>	0.7% (1)	140	5.1429
Lack of time to learn about various internet applications	2.1% (3)	2.1% (3)	12.1% (17)	11.4% (16)	<b>21.4% (30)</b>	<b>28.6% (40)</b>	20.7% (29)	1.4% (2)	140	5.1214
Lack of information technology skills	4.3% (6)	4.3% (6)	8.6% (12)	17.9% (25)	16.4% (23)	17.1% (24)	<b>30.7% (43)</b>	0.7% (1)	140	5.1000
Internet policies at the university	4.3% (6)	7.9% (11)	7.1% (10)	12.9% (18)	18.6% (26)	<b>25.7% (36)</b>	<b>23.6% (33)</b>	0.0% (0)	140	5.0500
Language problem	5.7% (8)	7.1% (10)	7.1% (10)	10.7% (15)	15.7% (22)	18.6% (26)	<b>32.9% (46)</b>	2.1% (3)	140	5.04285
Lack of awareness of benefit of these applications in learning	3.6% (5)	4.3% (6)	13.6% (19)	18.6% (26)	20.0% (28)	15.7% (22)	<b>24.3% (34)</b>	0.0% (0)	140	4.9142
Lack of encouragement and incentives from the academics staff	3.6% (5)	3.6% (5)	12.1% (17)	17.9% (25)	<b>25.0% (35)</b>	<b>20.7% (29)</b>	15.0% (21)	2.1% (3)	140	4.728571
Lack of confidence	10.7% (15)	10.0% (14)	11.4% (16)	15.7% (22)	<b>20.7% (29)</b>	14.3% (20)	15.0% (21)	2.1% (3)	140	4.2214
Not comfortable with the open and public nature of new technology or Web 2.0 applications	8.6% (12)	11.4% (16)	14.3% (20)	<b>24.3% (34)</b>	16.4% (23)	14.3% (20)	10.7% (15)	0.0% (0)	140	4.1429
Fear of technology	13.6% (19)	7.1% (10)	<b>17.1% (24)</b>	15.7% (22)	<b>17.9% (25)</b>	15.0% (21)	12.1% (17)	1.4% (2)	140	4.064286

### **6.3 Inferential Analysis**

The second section presents inferential statistics directly pertaining to the study's objectives. This study undertakes various statistical analyses including cross-tabulation using a chi-square test statistic that does not assume normality. The reason for using cross-tabulation was to be able easily to identify and compare trends. The chi-square test reveals whether the results of a crosstab are statistically significant. The purposes of using the chi-square test statistic are to explore gender differences and the ambiguity of the 'Web 2.0'. The independent variables in this study are:

- gender
- Knowledge of Web 2.0 terms (those who are aware of Web 2.0 as opposed to those who unaware of the terms).
- Smart phone and online learning activities

A bivariate correlation, using Spearman test, was also performed to determine whether a relationship exists between two particular variables (for example, as one variable increases, the other also increases; or as one variable increases, the other variable decreases). The purpose of this test is not to identify the direction or the nature of the relationships, but to establish the following:

- correlation between personal and learning activities on the web
- correlation between students' attitudes and beliefs about using online tools in LIS courses

#### ***6.3.1 Gender and Online Tools***

This section highlights the significant results in terms of gender. As previously mentioned, cross-tabulation were used to provide a table in which data could be compared using a row and column format. The chi-square was selected to test whether there was any difference between two particular variables (gender and other variables individually).

In the first, a cross-tabulation was performed to create a contingency table to test the degree of difference between the two groups (female and male) concerning fifteen

items that measured the level of importance of the challenges and barriers pertaining to online tools (question D 2). The reason for starting with the ‘challenges’ is to find out if there are any associations between these challenges and gender with regard to levels of knowledge and practice with online tools. This will be useful to interpret the differences between females and males later regarding using online tools use. Three items out of fifteen were found to have a statistically significant difference between females and males at .05 level. These are: language barriers, lack of awareness of the benefit of these applications for learning, and safety and privacy concerns.

The chi-square table (Table 6.22 A) indicates that there is a significant difference between groups concerning ‘safety and privacy concerns’: “ $\chi^2 = 15.419$ ,  $df = 7$ ,  $p = .031$ .”

Table 6.22 A. Chi-Square Tests ‘Gender’ versus ‘Safety and Privacy Concerns’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.419 <sup>a</sup>	7	.031
Likelihood Ratio	16.068	7	.025
Linear-by-Linear Association	.962	1	.327
N of Valid Cases	140		
a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is .26.			

As demonstrated in Table 6.22 B, female respondents were more likely to see safety and privacy concerns as an extremely important barrier or difficulty in determining the use of online tools than males. Among female students, 42% of them rated “safety and privacy concerns” as an “extremely important” barrier or difficulty compared with only 19% of male students. However, 35% of male students rated “safety and privacy concerns” as a “very important” barrier or difficulty, and 22% rated them as “somewhat important”.

Among female students, 19% of them rated ‘safety and privacy concerns’ as a “very important” barrier or difficulty, and 15% of rated them as “somewhat important”. It is also important to note that 76% of both females and males rated this as an important barrier on some level (somewhat important, very important and extremely important).

Table 6.22 B. Cross-Tabulation ‘Gender’ versus ‘Safety and Privacy Concerns’

Safety and Privacy Concerns		Gender		Total
		Male	Female	
No Opinion	% within Safety and privacy concerns	0.0%	100.0%	100.0%
	% within Gender	0.0%	2.9%	2.1%
	% of Total	0.0%	2.1%	2.1%
1. Extremely unimportant	Count	0	1	1
	% within Safety and privacy concerns	0.0%	100.0%	100.0%
	% within Gender	0.0%	1.0%	0.7%
	% of Total	0.0%	0.7%	0.7%
2. Very unimportant	Count	5	3	8
	% within Safety and privacy concerns	62.5%	37.5%	100.0%
	% within Gender	<b>13.5%</b>	<b>2.9%</b>	5.7%
	% of Total	3.6%	2.1%	5.7%
3. Somewhat unimportant	Count	1	7	8
	% within Safety and privacy concerns	12.5%	87.5%	100.0%
	% within Gender	2.7%	6.8%	5.7%
	% of Total	0.7%	5.0%	5.7%
4. Neither important nor unimportant	Count	3	11	14
	% within Safety and privacy concerns	21.4%	78.6%	100.0%
	% within Gender	8.1%	10.7%	10.0%
	% of Total	2.1%	7.9%	10.0%
5. Somewhat important	Count	8	15	23
	% within Safety and privacy concerns	34.8%	65.2%	100.0%
	% within Gender	<b>21.6%</b>	<b>14.6%</b>	16.4%
	% of Total	5.7%	10.7%	16.4%
6. Very important	Count	13	20	33
	% within Safety and privacy concerns	39.4%	60.6%	100.0%
	% within Gender	<b>35.1%</b>	<b>19.4%</b>	23.6%
	% of Total	9.3%	14.3%	23.6%
7. Extremely important	Count	7	43	50
	% within Safety and privacy concerns	14.0%	86.0%	100.0%
	% within Gender	<b>18.9%</b>	<b>41.7%</b>	35.7%
	% of Total	5.0%	30.7%	35.7%
Total	Count	37	103	140
	% within Safety and privacy concerns	26.4%	73.6%	100.0%
	% within Gender	100.0%	100.0%	100.0%
	% of Total	26.4%	73.6%	100.0%

The results of the chi-square indicated that there was a relationship between gender and the factor “language problem”: “ $X^2 = 14.633$ ,  $df = 7$ ,  $p = .041$ .” (Appendix G, Table 6.23 A). The cross table for this item (see Appendix G, table 6.23 B) shows that among male respondents, 27% of them thought that language problems were a “somewhat important” barrier or difficulty in utilising online tools, while only 12% of female respondents saw this as “somewhat important.” In contrast, among female respondents, over half (57%) classified language problems either a “very important” or “extremely important” barrier or difficulty in utilising online tools, compared to 35% of male respondents. It is therefore the case that female students were more



concerned with language problems as important factor in utilising the internet than male students.

The last item that was found to have a significant relationship to gender was lack of awareness of the benefit of these applications for learning: “ $X^2 = 13.388$ ,  $df = 6$ ,  $p = .037$ ” (see Appendix G, Table 6.24 A). According to the cross-tabulation table (Appendix G, Table 6.24 B), among male respondents, 27% of them rated lack of awareness of the benefit of these tools for learning as a “somewhat unimportant” barrier or difficulty in utilising online tools, while only 9% of females did so. In contrast, among female students, 15% of them rated this barrier or difficulty as “somewhat important,” and 29% rated it as “extremely important,” compared with only 5% of male students who rated it as “somewhat important,” and 11% as “extremely important”. Overall, female students were more likely to rate “lack of awareness of the benefit of these applications for learning” as an important factor in determining internet use than males.

In the second stage, a cross-tabulation was also performed to create a contingency table to test the degree of difference between the two groups concerning ten activities that measured the level of respondents’ knowledge of these activities pertaining to online tools (Question B 3). The chi-square tests indicated that there was a significant difference between the two groups in knowledge of three items: blogging (writing a blog, not just reading others), social bookmarking (e.g., Delicious), and using discussion forums (not in an LMS). The value significant is less than .05 level. For example, Table 6.25 A. indicates the chi-square test of the item “blogging (writing a blog, not just reading others)”. It was found a statistically significant association between gender and blogging exists as the chi-square significant level was reported as “ $X^2 = 16.101$ ,  $df = 4$ ,  $p = .003$ ”.

Table 6.25 A. Chi-Square Tests ‘Gender’ versus ‘Blogging’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.101 <sup>a</sup>	4	.003
Likelihood Ratio	15.241	4	.004
Linear-by-Linear Association	.210	1	.647
N of Valid Cases	142		
a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .80.			

The cross-tabulation table (Table 6.25 B) of independence of variables “gender” and “blogging” revealed that among male respondents, half of them (50%, n = 19 out of 38) reported that they had blogged but did not do so anymore, while 37% of female respondents (n = 38 out of 109) reported that they had blogged but did not do so anymore. This was the most notable difference between males and females regarding this item. As such, 39% (n = 40) of female students were actively blogging, but not as a major element of their internet use, compared to 18% (n = 7) of male students who blogged. It is also telling that only 11% among male respondents who knew about blogs did not do it, whereas this figure was 21.2% for females. As mentioned previously, the reason for no longer blogging might be explained by some students blogging because of course requirements and then stopping after course completion. The gender differences are also likely to be influenced by cultural attitudes and behaviours such as safety and privacy concerns. Broader interpretation of the differences between male and female students regarding blogging will be discussed in Chapter 8.

Table 6.25 B. Cross-Tabulation ‘Gender’ versus ‘Blogging’

			Gender		Total
			Male	Female	
Blogging (writing a blog, not just reading them)	Not heard of it	Count	2	1	3
		% within Blogging	66.7%	33.3%	100.0%
		% within Gender	5.3%	1.0%	2.1%
		% of Total	1.4%	0.7%	2.1%
	Know about it, but don't do it	Count	4	22	26
		% within Blogging	<b>15.4%</b>	<b>84.6%</b>	100.0%
		% within Gender	<b>10.5%</b>	<b>21.2%</b>	18.3%
		% of Total	2.8%	15.5%	18.3%
	Have done it, but don't anymore	Count	19	38	57
		% within Blogging	33.3%	66.7%	100.0%
		% within Gender	<b>50.0%</b>	<b>36.5%</b>	40.1%
		% of Total	13.4%	26.8%	40.1%
	Do it, but it is not a major aspect of my internet use	Count	7	40	47
		% within Blogging	14.9%	85.1%	100.0%
		% within Gender	<b>18.4%</b>	<b>38.5%</b>	33.1%
		% of Total	4.9%	28.2%	33.1%
Do it, and it is a major part of using the internet	Count	6	3	9	
	% within Blogging	<b>66.7%</b>	<b>33.3%</b>	100.0%	
	% within Gender	<b>15.8%</b>	<b>2.9%</b>	6.3%	
	% of Total	4.2%	2.1%	6.3%	
Total		Count	38	104	142
		% within Blogging	26.8%	73.2%	100.0%
		% within Gender	100.0%	100.0%	100.0%
		% of Total	26.8%	73.2%	100.0%

There was also a statistically significant difference between gender and the item “social bookmarking” and this was indicated by the .036 Sig. value in the chi-square tests table (see Table 6.26 A, Appendix G): “ $X^2 = 10.287$ ,  $df = 4$ ,  $p = .036$ ”. According to the cross-tabulation table of this item (see Appendix G, Table 6.26 B), those who had never heard of social bookmarking were more likely to be females. Among female respondents, 47% (49 out of 104) had not heard about social bookmarking, while only 29% (n=11 out of 83) of male respondents had not heard of it. However, among male respondents, 21% of them reported that they “have done it but do not anymore,” compared to only 10% of female respondents. The third item that was found to be significantly different was “using discussion forums (not in an LMS)”, because the chi-square value significance is .042 (see Table 6.27 A, Appendix G).

Table 6.27 B. Cross-Tabulation ‘Gender’ versus ‘Using Discussion Forums (not in an LMS)’

			Gender		Total
			Male	Female	
Using discussion forums (not in an LMS)	Not heard of it	Count	5	4	9
		% within Using discussion forums	55.6%	44.4%	100%
		% within Gender	13.2%	3.8%	6.3%
		% of Total	3.5%	2.8%	6.3%
	Know about it, but don't do it	Count	4	32	36
		% within Using discussion forums	<b>11.1%</b>	<b>88.9%</b>	100%
		% within Gender	<b>10.5%</b>	<b>30.8%</b>	25.4%
		% of Total	2.8%	22.5%	25.4%
	Have done it, but don't anymore	Count	13	23	36
		% within Using discussion forums	36.1%	63.9%	100%
		% within Gender	<b>34.2%</b>	<b>22.1%</b>	25.4%
		% of Total	9.2%	16.2%	25.4%
	Do it, but it is not a major aspect of my internet use	Count	11	31	42
		% within Using discussion forums	26.2%	73.8%	100%
		% within Gender	28.9%	29.8%	29.6%
		% of Total	7.7%	21.8%	29.6%
	Do it, and it is a major part of using the internet	Count	5	14	19
		% within Using discussion forums	26.3%	73.7%	100%
		% within Gender	<b>13.2%</b>	<b>13.5%</b>	13.4%
		% of Total	3.5%	9.9%	13.4%
Total	Count	38	104	142	
	% within Using discussion forums	26.8%	73.2%	100%	
	% within Gender	100.0%	100.0%	100%	
	% of Total	26.8%	73.2%	100%	

The cross-tabulation table (6.27 B) revealed that 31% of females knew about discussion forums (not LMS), but did not participate, while only 11% of male respondents knew about it but did not participate. It is also revealing that 34% of

male respondents reported participating in discussion forums but did not do so anymore; while 22% of female students reported participating in discussion forums but did not do so anymore. Male students tended to use more advanced technologies such as Facebook, which features broader communication and privacy options. Female students seemed to be more reluctant than male students to use discussion forums; however, nearly 40% of both females and males reported that they are using discussion forums as either a ‘major part’ or ‘not a major aspect’ of their internet use.

At the third stage, a cross-tabulation was also conducted to create a contingency table to test for the significance of the difference between two groups (female and male) regarding the use of seven online tools. The chi-square test indicated the existence of a relationship between gender and five online tools: Facebook, Twitter, LinkedIn, Academia.edu, and YouTube. The chi-square tests of these items can be found in Appendix G (Tables 6.28 A, 6.29 A, 6.30 A, 6.31 A and A 6.32). Table 6.28 B presents the cross-tabulation of independence variable “gender” and “Facebook”.

Table 6.28 B. Cross-Tabulation ‘Gender’ versus ‘Facebook’

			Gender		Total
			Male	Female	
Facebook	Not heard of it	Count	3	0	3
		% within Facebook	100.0%	0.0%	100.0%
		% within Gender	<b>7.9%</b>	<b>0.0%</b>	2.1%
		% of Total	2.1%	0.0%	2.1%
	Know about it, but don’t do it	Count	4	34	38
		% within Facebook	10.5%	89.5%	100.0%
		% within Gender	<b>10.5%</b>	<b>32.7%</b>	26.8%
		% of Total	2.8%	23.9%	26.8%
	Have done it, but don’t anymore	Count	5	23	28
		% within Facebook	17.9%	82.1%	100.0%
		% within Gender	<b>13.2%</b>	<b>22.1%</b>	19.7%
		% of Total	3.5%	16.2%	19.7%
	Do it, but it is not a major aspect of my internet use	Count	8	25	33
		% within Facebook	24.2%	75.8%	100.0%
		% within Gender	21.1%	24.0%	23.2%
		% of Total	5.6%	17.6%	23.2%
Do it, and it is a major part of using the internet	Count	18	22	40	
	% within Facebook	45.0%	55.0%	100.0%	
	% within Gender	<b>47.4%</b>	<b>21.2%</b>	28.2%	
	% of Total	12.7%	15.5%	28.2%	
Total	Count	38	104	142	
	% within Facebook	26.8%	73.2%	100.0%	
	% within Gender	100.0%	100.0%	100.0%	
	% of Total	26.8%	73.2%	100.0%	

It is revealing to see that among male respondents, nearly half (47%, 18 out of 38) reported that they used Facebook as a major part of their internet usage compared to only 21% of female respondents. There were 33% of female students (34 out of 104) who knew about Facebook but did not use it compared to only 11% (4 out of 38) of male students. It is also telling that 22% of female students have used Facebook but do not use it anymore. Similar reasons to those presented in the above sections can be applied to explain this difference, and this will discuss further in Chapter 8. As mentioned previously, however no significant differences were found between male and female respondents in regard to the use of social networking in general. This might indicate that females tended to use other SNSs more than Facebook and for different and more socially rooted purposes.

As reported in Table 6.11, 54% of respondents reported that they used YouTube as a major part of their internet usage. The cross-tabulation table (6.29 B) indicates that 43% of female respondents reported that they use YouTube, but it was not a major aspect of their internet usage, while 32% of male respondents reported this. In contrast, male students were more likely to use YouTube as a major part of their internet usage. Among male students, 58% of them reported that they used YouTube as a major part of their internet use, compared to 52% of female students.

Table 6.29 B. Cross-Tabulation ‘Gender’ versus ‘YouTube’

			Gender		Total
			Male	Female	
YouTube	Know about it, but don't do it	Count	0	4	4
		% within YouTube	0.0%	100.0%	100.0%
		% within Gender	0.0%	3.8%	2.8%
		% of Total	0.0%	2.8%	2.8%
	Have done it, but don't anymore	Count	4	1	5
		% within YouTube	80.0%	20.0%	100.0%
		% within Gender	10.5%	1.0%	3.5%
		% of Total	2.8%	0.7%	3.5%
	Do it, but it is not a major aspect of my internet use	Count	12	45	57
		% within YouTube	<b>21.1%</b>	<b>78.9%</b>	100.0%
		% within Gender	<b>31.6%</b>	<b>43.3%</b>	40.1%
		% of Total	8.5%	31.7%	40.1%
	Do it, and it is a major part of using the internet	Count	22	54	76
		% within YouTube	<b>28.9%</b>	<b>71.1%</b>	100.0%
		% within Gender	<b>57.9%</b>	<b>51.9%</b>	53.5%
		% of Total	15.5%	38.0%	53.5%
Total	Count	38	104	142	
	% within YouTube	26.8%	73.2%	100.0%	
	% within Gender	100.0%	100.0%	100.0%	
	% of Total	26.8%	73.2%	100.0%	

In respect to the online tools; Twitter, LinkedIn and Academia.edu, it should be noted that these tools were recorded to be less used by students as indicated in Table 6.11. However, the study also assesses gender differences for this small percentage of students. Firstly, in regards to Twitter, among female respondents, the majority of them (64%, N = 67 out of 104) were aware of Twitter but did not use it; whereas 42% of male students were aware of Twitter but did not use it (Table 6.30, Appendix G). It can be concluded that female students who were aware of Twitter were less likely to use it than similar male students. Again, it is important to refer to Table 6.11, which indicated that Twitter is a less popular online tool among Omani students, with only 12% of them using Twitter as a major part of their internet usage. Secondly, according to the cross-tabulation table referring to LinkedIn (Table 6.31 B, Appendix G), those who had not heard about LinkedIn were more likely to be female respondents among female students, 58% (60 out of 104) had not heard about LinkedIn, compared to 34% (13 out of 38) among male students. It can be also noted that males students were likely to use LinkedIn as a major part of their internet usage. Among male students, 13% of them reported that they did, compared to only 3% of female students. It seems that male respondents were more interested in using online professional networks than female respondents. The results in Table 6.11 indicated that half of respondents had never heard about LinkedIn. Thirdly, in regard to Academia.edu, according to Table 6.32 B (Appendix G), the majority of female respondents were likely to have no knowledge of Academia.edu. For female respondents, 61% reported that they had not heard of Academia.edu, whereas only 29% of male respondents reported the same. It is therefore evident that female respondents tend not to use or accept professional networking tools to the same extent as their male counterparts. It is possible that the lower level of usage of these social networking tools by female students may be due to culture attitudes and behaviours.

In respect to the frequency of personal activities on the web using various online tools, of the twelve items listed in the questionnaire that measure the frequency of online personal activities, five items were found to be statistically significant between genders at .05 level. Chi-squares were performed and relationships were found between gender and the items: “use of the internet for social networking (e.g., Facebook and MySpace)”; “use of the internet for making and sharing resources with

others (e.g., Delicious, wikis, and blogs)”; “use of the internet in the collaboration of ideas (e.g., wikis and blogs)”; “using Facebook to communicate with and collaborate with others”; and “using Twitter for finding people and following their activities”. The results from the chi-squares tables are shown in Appendix G, (Tables 6.33 A, 6.34 A, 6.35 A, 6.36 A and 6.37 A). The cross-tabulation tables for these items are shown in the next paragraphs. According to cross-tabulation Table 6.33 B, male respondents were more likely to use the internet for social networking (e.g., Facebook and MySpace) than female respondents. Among male respondents, 61% of them used the internet for social networking either “often” or “very often,” while 32% of female respondents did. Only 18% among male respondents reported that they had never used the internet for social networking, compared with 25% of female students.

Table 6.33 B. Cross-Tabulation ‘Gender’ versus ‘Use the internet for Social Networking’

Use the internet for social networking (e.g., Facebook and MySpace)		Gender		Total
		Male	Female	
Never use	Count	7	26	33
	% within Use the internet for social networking	21.2%	78.8%	100%
	% within Gender	<b>18.4%</b>	<b>25.0%</b>	23.2%
	% of Total	4.9%	18.3%	23.2%
Occasionally	Count	4	26	30
	% within Use the internet for social networking	13.3%	86.7%	100%
	% within Gender	<b>10.5%</b>	<b>25.0%</b>	21.1%
	% of Total	2.8%	18.3%	21.1%
Sometimes	Count	4	19	23
	% within Use the internet for social networking	17.4%	82.6%	100%
	% within Gender	10.5%	18.3%	16.2%
	% of Total	2.8%	13.4%	16.2%
Often	Count	10	10	20
	% within Use the internet for social networking	50.0%	50.0%	100%
	% within Gender	<b>26.3%</b>	<b>9.6%</b>	14.1%
	% of Total	7.0%	7.0%	14.1%
Very Often	Count	13	23	36
	% within Use the internet for social networking	36.1%	63.9%	100%
	% within Gender	<b>34.2%</b>	<b>22.1%</b>	25.4%
	% of Total	9.2%	16.2%	25.4%
Total	Count	38	104	142
	% within Use the internet for social networking	26.8%	73.2%	100%
	% within Gender	100%	100%	100%
	% of Total	26.8%	73.2%	100%

According to the cross-tabulation table (Table 6.34 B, Appendix G), 21% of female respondents (22 out of 104) have never used the internet for making and sharing resources with others for personal purposes, while all male respondents use the internet for this activity within different levels of usage. However, 55% (n =27) of

male respondents do this either “sometimes”, “often”, or “very often” while 39% (n = 41) of female students do this either “sometimes”, “often” or “very often”. It can be concluded that male students are more likely than females to use the internet for making and sharing resources with others for personal use. According to the table below (Table 6.35 B), among female respondents, it was found that 32% (n = 33) had never used the internet in the collaboration of ideas (e.g., wikis and blogs) for personal use, while only 11% (n = 4) of male respondents had not done this. It is also revealing that only 4% of female respondents did this “often” compared with 21% of male respondents. Male students are therefore more likely than female students to use the internet for the collaboration of ideas.

Table 6.35 B. Cross-Tabulation ‘Gender’ versus ‘Use the internet in the Collaboration of Ideas (e.g., Wikis and Blogs)’

Use the internet in collaborating of ideas (e.g., wikis and blogs)		Gender		
		Male	Female	Total
Never use	Count	4	33	37
	% within Use the internet in collaborating of ideas	10.8%	89.2%	100%
	% within Gender	<b>10.5%</b>	<b>31.7%</b>	26.1%
	% of Total	2.8%	23.2%	26.1%
Occasionally	Count	12	33	45
	% within Use the internet in collaborating of ideas	26.7%	73.3%	100%
	% within Gender	31.6%	31.7%	31.7%
	% of Total	8.5%	23.2%	31.7%
Sometimes	Count	10	29	39
	% within Use the internet in collaborating of ideas	25.6%	74.4%	100%
	% within Gender	26.3%	27.9%	27.5%
	% of Total	7.0%	20.4%	27.5%
Often	Count	8	4	12
	% within Use the internet in collaborating of ideas	66.7%	33.3%	100%
	% within Gender	<b>21.1%</b>	<b>3.8%</b>	8.5%
	% of Total	5.6%	2.8%	8.5%
Very Often	Count	4	5	9
	% within Use the internet in collaborating of ideas	44.4%	55.6%	100%
	% within Gender	10.5%	4.8%	6.3%
	% of Total	2.8%	3.5%	6.3%
Count		38	104	142
% within Use the internet in collaborating of ideas		26.8%	73.2%	100%
% within Gender		100%	100%	100%
% of Total		26.8%	73.2%	100%

The cross-tabulation Table 6.36 B shows that among female respondents, 39% (41 out of 104) had never used Facebook to communicate with and collaborate on ideas with others for personal purposes, while only 16% of male respondents had never done this. In contrast, 53% of male respondents had used Facebook to communicate with and collaborate on ideas with others for personal purposes either “often” or



“very often,” while 25% of female respondents had done this. It can be concluded that male respondents were more likely to use Facebook in communicating and collaborating with others than female students. In other words, males were more likely to be on Facebook undertaking this activity than females. This may be explained in part, as mentioned above, due to cultural attitudes that make female students careful about revealing their personal information on such sites, and they are also cautious about communicating with males in open forums.

Table 6.36 B. Cross-Tabulation ‘Gender’ versus ‘Using Facebook to Communicate with and Collaborate on Ideas with Others’

Using Facebook to communicate with and collaborate on ideas with others		Gender		Total
		Male	Female	
Never use	Count	6	41	47
	% within Using Facebook to communicate with and collaborate on ideas with others	12.8%	87.2%	100.0%
	% within Gender	<b>15.8%</b>	<b>39.4%</b>	33.1%
	% of Total	4.2%	28.9%	33.1%
Occasionally	Count	5	15	20
	% within Using Facebook to communicate with and collaborate on ideas with others	25.0%	75.0%	100.0%
	% within Gender	13.2%	14.4%	14.1%
	% of Total	3.5%	10.6%	14.1%
Sometimes	Count	7	22	29
	% within Using Facebook to communicate with and collaborate on ideas with others	24.1%	75.9%	100.0%
	% within Gender	18.4%	21.2%	20.4%
	% of Total	4.9%	15.5%	20.4%
Often	Count	10	12	22
	% within Using Facebook to communicate with and collaborate on ideas with others	45.5%	54.5%	100.0%
	% within Gender	<b>26.3%</b>	<b>11.5%</b>	15.5%
	% of Total	7.0%	8.5%	15.5%
Very Often	Count	10	14	24
	% within Using Facebook to communicate with and collaborate on ideas with others	41.7%	58.3%	100.0%
	% within Gender	<b>26.3%</b>	<b>13.5%</b>	16.9%
	% of Total	7.0%	9.9%	16.9%
Total	Count	38	104	142
	% within Using Facebook to communicate with and collaborate on ideas with others	26.8%	73.2%	100.0%
	% within Gender	100%	100%	100%
	% of Total	26.8%	73.2%	100%

In terms of using Twitter to find and follow people’s activities, the cross-tabulation in Table 6.37 B, Appendix G indicates that 64% of female respondents had never used Twitter for finding and following people and activities for personal purposes, compared to only 37% of male respondents. Those who had never used Twitter for finding and following people and activities were more likely to be female. This is

consistent with the finding mentioned above that female students are less interested in professional networks because of cultural attitudes. The remaining female respondents (36%, n = 24) used Twitter for finding and following people and activities either occasionally, sometimes, often, or very often, while the majority of the males (63%, n = 24) used Twitter for finding and following people and activities. It can be concluded from the data presented that male students were more likely than female students to use online tools for their personal uses. The reason for the lack of female participation in SNSs and other online tools may be a result of cultural attitudes, as discussed earlier.

There was a relationship between gender and five of the twelve items listed in the questionnaire that measured the frequency of learning activities on the web, using chi-square.

Table 6.38 B. Cross-Tabulation ‘Gender’ versus ‘Use the Web for Instant Messaging/Chat’

Use the web for instant messaging/chat (e.g., MSN)		Gender		Total
		Male	Female	
Never use	Count	1	37	38
	% within Use the web for instant messaging/chat	2.6%	97.4%	100%
	% within Gender	<b>2.6%</b>	<b>35.6%</b>	26.8%
	% of Total	0.7%	26.1%	26.8%
Occasionally	Count	9	26	35
	% within Use the web for instant messaging/chat	25.7%	74.3%	100%
	% within Gender	23.7%	25.0%	24.6%
	% of Total	6.3%	18.3%	24.6%
Sometimes	Count	13	15	28
	% within Use the web for instant messaging/chat	46.4%	53.6%	100%
	% within Gender	<b>34.2%</b>	<b>14.4%</b>	19.7%
	% of Total	9.2%	10.6%	19.7%
Often	Count	5	11	16
	% within Use the web for instant messaging/chat	31.2%	68.8%	100%
	% within Gender	13.2%	10.6%	11.3%
	% of Total	3.5%	7.7%	11.3%
Very Often	Count	10	15	25
	% within Use the web for instant messaging/chat	40.0%	60.0%	100%
	% within Gender	<b>26.3%</b>	<b>14.4%</b>	17.6%
	% of Total	7.0%	10.6%	17.6%
Total	Count	38	104	142
	% within Use the web for instant messaging/chat	26.8%	73.2%	100%
	% within Gender	100%	100%	100%
	% of Total	26.8%	73.2%	100%

These items were: “use the web for instant messaging/chat (e.g., MSN)”; “use the internet for social networking (e.g., Facebook and MySpace); “use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)”; “use the

internet in the collaboration of ideas (e.g., wikis and blogs)”, and “use Facebook to communicate with and collaborate on ideas with others”. The results from the chi-square tables are shown in Appendix G (Tables 6.38 A, 6.39 A, 6.40 A, 6.41 A and 6.42 A). As indicated in above table (Table 6.38 B), among female respondents, 36% (37 out of 104) reported that they had never used the web for instant messaging/chat for learning purposes, while only 3% (1 out of 38) of male respondents had never used the web for learning purposes. It can also be noted from the table that among male students, 74% use the web for instant messaging/chat either “sometimes”, “often”, or “very often”, while 39% of female students did so. Male students used the web for instant messaging/chat for learning purposes more frequently than female students. The cross-tabulation Table 6.39 B indicates that among female respondents, 45% reported that they had never used the internet for social networking, compared to only 11% of male respondents. The male students were more likely to use the internet for social networking either “often” or “very often” (42%), compared to only 20% of female students.

Table 6.39 B. Cross-Tabulation ‘Gender’ versus ‘Use the internet for Social Networking’

Use the internet for social networking (e.g., Facebook and MySpace)		Gender		Total
		Male	Female	
Never use	Count	4	47	51
	% within Use the internet for social networking	7.8%	92.2%	100.0%
	% within Gender	<b>10.5%</b>	<b>45.2%</b>	35.9%
	% of Total	2.8%	33.1%	35.9%
Occasionally	Count	11	16	27
	% within Use the internet for social networking	40.7%	59.3%	100.0%
	% within Gender	<b>28.9%</b>	<b>15.4%</b>	19.0%
	% of Total	7.7%	11.3%	19.0%
Sometimes	Count	7	20	27
	% within Use the internet for social networking	25.9%	74.1%	100.0%
	% within Gender	18.4%	19.2%	19.0%
	% of Total	4.9%	14.1%	19.0%
Often	Count	6	10	16
	% within Use the internet for social networking	37.5%	62.5%	100.0%
	% within Gender	15.8%	9.6%	11.3%
	% of Total	4.2%	7.0%	11.3%
Very Often	Count	10	11	21
	% within Use the internet for social networking	47.6%	52.4%	100.0%
	% within Gender	<b>26.3%</b>	<b>10.6%</b>	14.8%
	% of Total	7.0%	7.7%	14.8%
Total	Count	38	104	142
	% within Use the internet for social networking	26.8%	73.2%	100.0%
	% within Gender	100%	100%	100%
	% of Total	26.8%	73.2%	100.0%

As indicated in the cross-tabulation Table 6.40 B, among female respondents, 38% had never used the internet for contributing and developing content concerning their learning, as compared to 11% of male respondents. Among male students, 26.4% (n=10) used the internet for contributing and developing content either “often” or “very often”, compared with 14% (n = 15) of females. It can be concluded that male students were more likely to use the internet for this learning purpose than female students.

Table 6.40 B. Cross-Tabulation ‘Gender’ versus ‘Use the internet for Contributing and Developing Content’

Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)		Gender		Total
		Male	Female	
Never use	Count	4	39	43
	% within Use the internet for contributing and developing content	9.3%	90.7%	100%
	% within Gender	<b>10.5%</b>	<b>37.5%</b>	30.3%
	% of Total	2.8%	27.5%	30.3%
Occasionally	Count	15	27	42
	% within Use the internet for contributing and developing content	35.7%	64.3%	100%
	% within Gender	39.5%	26.0%	29.6%
	% of Total	10.6%	19.0%	29.6%
Sometimes	Count	9	23	32
	% within Use the internet for contributing and developing content	28.1%	71.9%	100%
	% within Gender	23.7%	22.1%	22.5%
	% of Total	6.3%	16.2%	22.5%
Often	Count	8	12	20
	% within Use the internet for contributing and developing content	40.0%	60.0%	100%
	% within Gender	<b>21.1%</b>	<b>11.5%</b>	14.1%
	% of Total	5.6%	8.5%	14.1%
Very Often	Count	2	3	5
	% within Use the internet for contributing and developing content	40.0%	60.0%	100%
	% within Gender	<b>5.3%</b>	<b>2.9%</b>	3.5%
	% of Total	1.4%	2.1%	3.5%
Total	Count	38	104	142
	% within Use the internet for contributing and developing content	26.8%	73.2%	100%
	% within Gender	100%	100%	100%
	% of Total	26.8%	73.2%	100%

In terms of using the internet for the collaboration of ideas (e.g., wikis and blogs), the chi-square test indicated a significant difference between females and males: “ $X^2 = 11.838$ ,  $df = 4$ ,  $p = .019$ ”. The cross-tabulated Table 6.41 B indicates that those who did not use the internet for the collaboration in ideas were more likely to be female, with 33% indicating they had never used the internet for this purpose, compared to

only 8% of male respondents. The cross-tabulation table also indicates that male respondents were likely to use the internet for the collaboration of ideas either “sometimes”, “often”, or “very often” (58%), compared to (35%) of female respondents.

Table 6.41 B. Cross-Tabulation ‘Gender’ versus ‘Use the internet for the Collaboration of Ideas’

Use the internet in collaborating on ideas (e.g., wikis and blogs)		Gender		Total
		Male	Female	
Never use	Count	3	34	37
	% within Use the internet on collaborating in ideas	8.1%	91.9%	100.0%
	% within Gender	<b>7.9%</b>	<b>32.7%</b>	26.1%
	% of Total	2.1%	23.9%	26.1%
Occasionally	Count	13	34	47
	% within Use the internet on collaborating in ideas	27.7%	72.3%	100.0%
	% within Gender	34.2%	32.7%	33.1%
	% of Total	9.2%	23.9%	33.1%
Sometimes	Count	9	20	29
	% within Use the internet on collaborating in ideas	31.0%	69.0%	100.0%
	% within Gender	<b>23.7%</b>	<b>19.2%</b>	20.4%
	% of Total	6.3%	14.1%	20.4%
Often	Count	9	12	21
	% within Use the internet on collaborating in ideas	42.9%	57.1%	100.0%
	% within Gender	<b>23.7%</b>	<b>11.5%</b>	14.8%
	% of Total	6.3%	8.5%	14.8%
Very Often	Count	4	4	8
	% within Use the internet on collaborating in ideas	50.0%	50.0%	100%
	% within Gender	<b>10.5%</b>	<b>3.8%</b>	5.6%
	% of Total	2.8%	2.8%	5.6%
Total	Count	38	104	142
	% within Use the internet on collaborating in ideas	26.8%	73.2%	100%
	% within Gender	100.0%	100%	100%
	% of Total	26.8%	73.2%	100%

According to the cross-tabulation Table 6.42 B, nearly half (49%) of female respondents reported that they had never used Facebook to communicate or collaborate with others with regard to their learning activities, compared to 18% of male respondents. It also can be noted from the table that among male respondents, 42% used Facebook to communicate and collaborate with others either “often” or “very often,” while only 15% of female students reported the same. It is therefore concluded that male students were more likely than females to use Facebook to communicate with and collaborate on ideas with others.

Table 6.42 B. Cross-Tabulation ‘Gender’ versus ‘Using Facebook to Communicate and Collaborate on Ideas with Others’

Using Facebook to communicate with and collaborate on ideas with others		Gender		Total
		Male	Female	
Never use	Count	7	51	58
	% within Using Facebook to communicate with and collaborate on ideas with others	12.1%	87.9%	100%
	% within Gender	<b>18.4%</b>	<b>49.0%</b>	40.8%
	% of Total	4.9%	35.9%	40.8%
Occasionally	Count	5	14	19
	% within Using Facebook to communicate with and collaborate on ideas with others	26.3%	73.7%	100%
	% within Gender	13.2%	13.5%	13.4%
	% of Total	3.5%	9.9%	13.4%
Sometimes	Count	10	23	33
	% within Using Facebook to communicate with and collaborate on ideas with others	30.3%	69.7%	100%
	% within Gender	26.3%	22.1%	23.2%
	% of Total	7.0%	16.2%	23.2%
Often	Count	9	10	19
	% within Using Facebook to communicate with and collaborate on ideas with others	47.4%	52.6%	100%
	% within Gender	<b>23.7%</b>	<b>9.6%</b>	13.4%
	% of Total	6.3%	7.0%	13.4%
Very Often	Count	7	6	13
	% within Using Facebook to communicate with and collaborate on ideas with others	53.8%	46.2%	100%
	% within Gender	<b>18.4%</b>	<b>5.8%</b>	9.2%
	% of Total	4.9%	4.2%	9.2%
Total	Count	38	104	142
	% within Using Facebook to communicate with and collaborate on ideas with others	26.8%	73.2%	100%
	% within Gender	100.0%	100.0%	100%
	% of Total	26.8%	73.2%	100%

It seems that the difference between females and males in using the internet for personal and learning purposes is related to their activities, willingness to use, and levels of knowledge of these online tools. Female and male students reported differences in the frequency of practicing three main activities: using the internet for social networking (e.g., Facebook and MySpace)”; “using the internet for collaborating on ideas (e.g., wikis and blogs)” and “using Facebook to communicate and collaborate on ideas with others”. It can therefore be concluded that male students were more likely to use SNSs for personal and learning purposes than female students. The findings from Table 6.22 are consistent with the fact that females do not use SNSs, including Facebook as frequently for personal and learning activities because of safety and privacy concerns and, following from this, because of an apparent lack of awareness of the benefit of these applications for learning which

is due to their lack of knowledge and practice of these tools. These are important issues for women in Omani society.

A cross-tabulation was also performed to measure the attitudes of the two groups toward using various online tools in the LIS course (Question C 3). No items were found to statistically differ significantly across the participants' gender groupings at .05 level. In other words, male students did not differ from female students in their pattern of responses to these statements. As such, there were no significant differences found in regard to respondents' concepts about using various online tools at future workplaces (Question C 4). There were also no items found to statistically differ significantly across the participants' gender groupings at .05 level in regard to students' attitude toward using various online tools versus using LMS (Question C 5). With regard to motivations and factors utilising the online tools, no items were found to statistically differ significantly across the participants' gender groupings at .05 level (Question D 1). These findings indicated that males and females hold similar beliefs and attitudes toward using various online tools in LIS courses. These are largely positive beliefs and attitudes as reported in Tables 6.17 and 6.18.

### ***6.3.2 Web 2.0 Label and Descriptive Terms***

#### **6.3.2.1 Web 2.0 Label**

This study investigates the ambiguity of 'Web 2.0' by looking at different online activities practiced and used by students on the web. There were two groups of respondents: those aware of a particular term (they answered "yes") and those unaware of it (they answered "no"). A cross-tabulation using a chi-square test was used to determine whether there were significant differences in the participants' responses and attitudes concerning the particular term according to their knowledge of the term. Of the ten online activities, only three were found indicate a slight statistical significance on a list of statements that measured the knowledge of online activities according to awareness of 'Web 2.0'.

A significant difference was found across the two groups at .05 level with regard to "document sharing (e.g., SlideShare.net);" "social bookmarking (e.g., Delicious)", and "listening to podcasts". The result of the chi-square test (Table 6.43 A)

illustrated a significant difference between those aware of the term and those who were not aware, pertaining to “document sharing.”

Table 6.43 A. Chi-Square Tests ‘Web 2.0 ‘awareness’ versus ‘Document Sharing’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.739 <sup>a</sup>	4	.030
Likelihood Ratio	10.308	4	.036
Linear-by-Linear Association	5.072	1	.024
N of Valid Cases	142		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.96.

According to Table 6.43 B, those respondents aware of the term ‘Web 2.0’ were more likely to know much more about document sharing; among those aware of the term, only 11% reported that they had not heard of it, while 32% of those not aware of the term reported this.

Table 6.43 B. Cross-Tabulation ‘Web 2.0 awareness’ versus ‘Document Sharing’

Document sharing (e.g., SlideShare.net)		Are you aware of the term Web 2.0?		Total
		YES	NO	
Not heard of it	Count	10	15	25
	% within Document sharing	40.0%	60.0%	100.0%
	% within Are you aware of the term Web 2.0?	<b>10.5%</b>	<b>31.9%</b>	17.6%
	% of Total	7.0%	10.6%	17.6%
Know about it but don't do it	Count	30	13	43
	% within Document sharing	69.8%	30.2%	100.0%
	% within Are you aware of the term Web 2.0?	31.6%	27.7%	30.3%
	% of Total	21.1%	9.2%	30.3%
Have done it but don't anymore	Count	13	5	18
	% within Document sharing	72.2%	27.8%	100.0%
	% within Are you aware of the term Web 2.0?	13.7%	10.6%	12.7%
	% of Total	9.2%	3.5%	12.7%
Do it, but it is not a major aspect of my internet use	Count	26	7	33
	% within Document sharing	78.8%	21.2%	100.0%
	% within Are you aware of the term Web 2.0?	<b>27.4%</b>	<b>14.9%</b>	23.2%
	% of Total	18.3%	4.9%	23.2%
Do it, and it is a major part of using the internet	Count	16	7	23
	% within Document sharing	69.6%	30.4%	100.0%
	% within Are you aware of the term Web 2.0?	16.8%	14.9%	16.2%
	% of Total	11.3%	4.9%	16.2%
Total	Count	95	47	142
	% within Document sharing	66.9%	33.1%	100.0%
	% within Are you aware of the term Web 2.0?	100.0%	100.0%	100.0%
	% of Total	66.9%	33.1%	100.0%



However, 15% of those not aware of the term performed the activity, but it was not a major aspect of their internet use, and 5% of those not aware of the term performed the activity as a major part of their internet use. With this slight difference between the two groups, it can be noted that even those who were not aware of the term had knowledge about this type of activity. This suggests that the knowledge of the term did not affect the way respondents used and adopted online tools. In other words, both groups had used online tools such as SlideShare for document sharing; however, the level of practice was different between the two groups.

The next item that shows a significant difference according to chi-square Table 6.44 A. is social bookmarking (e.g., Delicious), “ $\chi^2 = 10.602$ ,  $df = 4$ ,  $p = .031$ .”

Table 6.44 A. Chi-Square Tests ‘Web 2.0 awareness’ versus ‘Social Bookmarking’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.602 <sup>a</sup>	4	.031
Likelihood Ratio	11.119	4	.025
Linear-by-Linear Association	4.907	1	.027
N of Valid Cases	142		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.64.

From Table 6.44 B, it can be noted that the majority (60%) of those who were unaware of the term ‘Web 2.0’ reported that they had never heard about social bookmarking, while 34% of those who had heard about the term reported that they had not heard of social bookmarking. This also revealed that 40% of those unaware of the term were aware of social bookmarking tools.

Table 6.44 B. Cross-Tabulation ‘Web 2.0 awareness’ versus ‘Social Bookmarking’

Social Bookmarking (e.g., Delicious)		Are you aware of the term Web 2.0?		Total
		YES	NO	
Not heard of it	Count	32	28	60
	% within Social Bookmarking	53.3%	46.7%	100%
	% within Are you aware of the term Web 2.0?	<b>33.7%</b>	<b>59.6%</b>	42.3%
	% of Total	22.5%	19.7%	42.3%
Know about it but don't do it	Count	19	3	22
	% within Social Bookmarking	86.4%	13.6%	100%
	% within Are you aware of the term Web 2.0?	20.0%	6.4%	15.5%
	% of Total	13.4%	2.1%	15.5%
Have done it but don't anymore	Count	12	6	18
	% within Social Bookmarking	66.7%	33.3%	100%
	% within Are you aware of the term Web 2.0?	12.6%	12.8%	12.7%
	% of Total	8.5%	4.2%	12.7%

	% of Total	8.5%	4.2%	12.7%
Do it, but it is not a major aspect of my internet use	Count	23	8	31
	% within Social Bookmarking	74.2%	25.8%	100%
	% within Are you aware of the term Web 2.0?	24.2%	17.0%	21.8%
	% of Total	16.2%	5.6%	21.8%
Do it, and it is a major part of using the internet	Count	9	2	11
	% within Social Bookmarking	81.8%	18.2%	100%
	% within Are you aware of the term Web 2.0?	9.5%	4.3%	7.7%
	% of Total	6.3%	1.4%	7.7%
Count		95	47	142
% within Social Bookmarking		66.9%	33.1%	100%
% within Are you aware of the term Web 2.0?		100%	100%	100%
% of Total		66.9%	33.1%	100%

The last item that shows a significant difference according to chi-square (Table 6.45 A) is listening to podcasts: “ $X^2 = 10.215$ ,  $df = 4$ ,  $p = .037$ .”

Table 6.45 A. Chi-Square Tests ‘Web 2.0 awareness’ versus ‘Listening to Podcasts’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.215 <sup>a</sup>	4	.037
Likelihood Ratio	11.398	4	.022
Linear-by-Linear Association	3.282	1	.070
N of Valid Cases	142		
a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 2.65.			

The cross-tabulation Table 6.45 B reports a slight difference between the two groups; 45% of those unaware of the term ‘Web 2.0’ reported that they had never heard about podcasts, and 32% of those aware of the term reported that they had never heard about podcasts. This also indicates that half of those unaware of the term ‘Web 2.0’ were aware of podcasts. However, those who were aware of the term ‘Web 2.0’ were more likely to use podcasts as a major part of their internet use.

It should be noted that the items: “social bookmarking” and “listening to podcasts” had a comparatively low response, as indicated in Table 6.11. This leads to the conclusion that both groups had knowledge about these activities but on different levels, which would thus explain that the term ‘Web 2.0’ was not the main concern of respondents.

Table 6.45 B. Cross-Tabulation ‘Web 2.0 awareness’ versus ‘Listening to Podcasts’

Listening to Podcasts		Are you aware of the term Web 2.0?		Total
		YES	NO	
Not heard of it	Count	30	21	51
	% within Listening to Podcasts	58.8%	41.2%	100%
	% within Are you aware of the term Web 2.0?	<b>31.6%</b>	<b>44.7%</b>	35.9%
	% of Total	21.1%	14.8%	35.9%
Know about it but don't do it	Count	25	16	41
	% within Listening to Podcasts	61.0%	39.0%	100%
	% within Are you aware of the term Web 2.0?	26.3%	34.0%	28.9%
	% of Total	17.6%	11.3%	28.9%
Have done it but don't anymore	Count	18	4	22
	% within Listening to Podcasts	81.8%	18.2%	100%
	% within Are you aware of the term Web 2.0?	18.9%	8.5%	15.5%
	% of Total	12.7%	2.8%	15.5%
Do it, but it is not a major aspect of my internet use	Count	18	2	20
	% within Listening to Podcasts	90.0%	10.0%	100%
	% within Are you aware of the term Web 2.0?	18.9%	4.3%	14.1%
	% of Total	12.7%	1.4%	14.1%
Do it, and it is a major part of using the internet	Count	4	4	8
	% within Listening to Podcasts	50.0%	50.0%	100%
	% within Are you aware of the term Web 2.0?	4.2%	8.5%	5.6%
	% of Total	2.8%	2.8%	5.6%
Total	Count	95	47	142
	% within Listening to Podcasts	66.9%	33.1%	100%
	% within Are you aware of the term Web 2.0?	100	100	100
	% of Total	66.9%	33.1%	100%

Of the seven items listed in the questionnaire that measure the knowledge of respondents of seven online tools (Question B 4), no items were found to be statistically significant on a list of statements that measured the level of knowledge and practices of online tools according to awareness of ‘Web 2.0’. It can be concluded from an analysis of the data that there was no significant difference found between the two groups, and indicating that unawareness of the term ‘Web 2.0’ did not affect how participants used and adopted these online tools. This is likely because of the ambiguity and uncertainty of the term ‘Web 2.0’ as understood by the students. Another likely reason might be that respondents were less interested in ‘Web 2.0’ as a term and more concerned about particular online tools and what they actually do. Chapter 8 considers in more depth the ambiguity and uncertainty of the term ‘Web 2.0’. It examines findings from interviews, surveys, and case studies to better understand academic and students’ attitude toward the term ‘Web 2.0’.

### 6.3.2.2 Descriptive Terms of Web 2.0

This study also undertakes a bivariate correlation, using Spearman's rho, to test the relationship between two variables and then explore whether there is any relationship between the descriptive words of 'Web 2.0' and online tools and activities. Table 6.46 presents the relationship between the descriptive words of 'Web 2.0' and five online activities (significant results only), indicating there is a statistically significant positive relationship between the descriptive words of 'Web 2.0' and five online activities: blogging (writing a blog, not just reading others); document sharing; social bookmarking; creating or writing in a wiki, and listening to podcasts. The Sig value was less than .05.

- The activity "blogging (writing a blog, not just reading others)" and the descriptive words "ease of use", "social networks", "collective intelligence", and "freedom" were correlated; the Sig value was less than .05.
- The activity "document sharing" and the descriptive words "more active participation in the Web", "ability to create and update content", "ability to share information", "remixing or mashup of information", "the web as platform for services", "collaboration", "communication", "social software", and "social networks" were correlated; the Sig value was less than .05.
- The activity "social bookmarking" and the descriptive words "transparency", "the web as platform for services" and "collaboration" were correlated; the Sig value was less than .05.
- The activity "creating or writing in a wiki" and the descriptive words "more active participation in the web", "ability to create and update content", "remixing or mashup of information", "collaboration", "social networks" and "freedom" were correlated; the Sig value was less than .05.
- The activity "listening to podcasts" and the descriptive words "ability to share information" and "the web as platform for services" were correlated; the Sig value was less than .05.

Table 6.46 Spearman's rho Correlations 'Descriptive Words of Web 2.0' versus 'Five Online Activities' (significant results only)

			Blogging	Document sharing	Social Bookmarking	Creating or writing in a wiki	Listening to Podcasts
Spearman's rho	Ease of use	Correlation Coefficient	.229*	.167	.194	.129	.185
		Sig. (2-tailed)	.025	.106	.059	.213	.073
		N	95	95	95	95	95
	More active participation in the Web	Correlation Coefficient	.193	.275**	.177	.239*	.197
		Sig. (2-tailed)	.061	.007	.086	.020	.055
		N	95	95	95	95	95
	Ability to create and update content	Correlation Coefficient	.161	.280**	.091	.296**	.187
		Sig. (2-tailed)	.118	.006	.379	.004	.069
		N	95	95	95	95	95
	Ability to share information	Correlation Coefficient	.081	.321**	.137	.198	.204*
		Sig. (2-tailed)	.434	.002	.185	.055	.048
		N	95	95	95	95	95
	Remixing or mashups of information	Correlation Coefficient	.108	.261*	.060	.282**	.140
		Sig. (2-tailed)	.297	.010	.563	.006	.175
		N	95	95	95	95	95
	Transparency	Correlation Coefficient	.008	.138	.229*	.061	-.003
		Sig. (2-tailed)	.936	.184	.026	.555	.974
		N	95	95	95	95	95
	The web as platform for services	Correlation Coefficient	.014	.346**	.394**	.187	.306**
		Sig. (2-tailed)	.889	.001	.000	.069	.003
		N	95	95	95	95	95
	Collaboration	Correlation Coefficient	.151	.245*	.222*	.216*	.200
		Sig. (2-tailed)	.144	.017	.030	.035	.052
		N	95	95	95	95	95
	Communication	Correlation Coefficient	.092	.245*	.144	.069	.162
		Sig. (2-tailed)	.377	.017	.163	.504	.117
		N	95	95	95	95	95
	Social software	Correlation Coefficient	.136	.268**	.168	.167	.195
		Sig. (2-tailed)	.190	.009	.104	.106	.058
		N	95	95	95	95	95
Social networks	Correlation Coefficient	.209*	.246*	.151	.202*	.149	
	Sig. (2-tailed)	.042	.016	.145	.050	.150	
	N	95	95	95	95	95	
Collective intelligence	Correlation Coefficient	.256*	.062	.139	.114	.143	
	Sig. (2-tailed)	.012	.549	.180	.270	.167	
	N	95	95	95	95	95	
Freedom	Correlation Coefficient	.334**	.198	.194	.223*	.168	
	Sig. (2-tailed)	.001	.055	.060	.030	.105	
	N	95	95	95	95	95	

It is telling that the respondents' activities reflect descriptions of 'Web 2.0'. For example, 'Web 2.0' is referred to as having the ability to share information and this is related to the activities of document sharing and listening to podcasts, in which users can share files with others. The respondents' activities such as blogging,

document sharing, and creating or writing in a wiki reflected their description of the ‘Web 2.0’ as social networks.

Table 6.47 indicates the relationships between the descriptive words of ‘Web 2.0’ and online tools (significant results only).

Table 6.47 Spearman's rho Correlations ‘Descriptive Words of Web 2.0’ versus ‘Five Online Tools (significant results only)

			Facebook	Wikipedia	Google Docs
Spearman's rho	Ease of use	Correlation Coefficient	.206*	.336**	.041
		Sig. (2-tailed)	.045	.001	.696
		N	95	95	95
	More active participation in the Web	Correlation Coefficient	-.013	.271**	.119
		Sig. (2-tailed)	.898	.008	.251
		N	95	95	95
	Ability to create and update content	Correlation Coefficient	.030	.263**	.122
		Sig. (2-tailed)	.772	.010	.240
		N	95	95	95
	Ability to share information	Correlation Coefficient	-.069	.185	.104
		Sig. (2-tailed)	.507	.073	.317
		N	95	95	95
	Remixing or mashups of information	Correlation Coefficient	-.049	.031	.074
		Sig. (2-tailed)	.639	.767	.474
		N	95	95	95
	Transparency	Correlation Coefficient	-.036	-.031	.173
		Sig. (2-tailed)	.730	.764	.094
		N	95	95	95
	The web as platform for services	Correlation Coefficient	.002	.235*	.091
		Sig. (2-tailed)	.985	.022	.380
		N	95	95	95
	Collaboration	Correlation Coefficient	.011	.264**	.051
		Sig. (2-tailed)	.913	.010	.626
		N	95	95	95
	Communication	Correlation Coefficient	-.026	.330**	.001
		Sig. (2-tailed)	.803	.001	.994
		N	95	95	95
	Social software	Correlation Coefficient	.020	.269**	.026
		Sig. (2-tailed)	.850	.008	.801
		N	95	95	95
Social networks	Correlation Coefficient	-.001	.295**	.014	
	Sig. (2-tailed)	.990	.004	.893	
	N	95	95	95	
Collective intelligence	Correlation Coefficient	.133	.321**	.297**	
	Sig. (2-tailed)	.197	.002	.003	
	N	95	95	95	
Freedom	Correlation Coefficient	.129	.296**	.196	
	Sig. (2-tailed)	.212	.004	.057	
	N	95	95	95	

The Table 6.47 indicates that there is a statistically significant positive relationship between:

- Facebook and “ease of use”; the Sig value was .045, which is less than .05.
- Wikipedia and descriptive words “ease of use”, “more active participation in the web”, “ability to create and update content”, “the web as platform for services”, “collaboration”, “communication”, “social software”, “social networks”, “collective intelligence” and “freedom”.
- Google. Doc and “collective intelligence”; the Sig value is .003 which is less than .05.

It can be concluded that the original understanding of ‘Web 2.0’, according to students, comes from their use of Wikipedia and other online tools such as Facebook. These online tools allow respondents to collaborate, communicate, participate with, and contribute content. Therefore, they describe ‘Web 2.0’ as they practice on these sites. In other words, and as mentioned in Chapter 3, using online tools such as Wikipedia creates a particular understanding of the features that are typical of the internet and ‘Web 2.0’ among users. For example, those respondents who use Wikipedia for creating and updating content, have defined ‘Web 2.0’ as the ability to create and update content, which is based on their knowledge of Wikipedia (see Table 6.47)

### ***6.3.3 Smartphone and Online Learning Activities***

Correlation analysis was performed to examine if there was a correlation between smartphone use and using of online tools in learning. Table 6.48 presents the result of the correlation analysis of Spearman tests. Interestingly, the results reveal that there is a positive correlation at the significant level of 0.05 between smartphone use and use of Facebook, Twitter and YouTube applications. This strongly suggests that students use smartphone to access and use these applications. They typically favour the use of Facebook and YouTube via their smartphones.

Table 6.48 Spearman's rho Correlations 'Smart phone' versus 'Seven Online Tools'

		<b>Smart Phone (e.g., iPhone, Blackberry, Galaxy, etc.)</b>		
Spearman's rho	Facebook	Correlation Coefficient	.579**	
		Sig. (2-tailed)	.000	
		N	142	
	Twitter	Correlation Coefficient	.287**	
		Sig. (2-tailed)	.001	
		N	142	
	Wikipedia	Correlation Coefficient	.096	
		Sig. (2-tailed)	.254	
		N	142	
	Google Docs	Correlation Coefficient	.158	
		Sig. (2-tailed)	.060	
		N	142	
	LinkedIn	Correlation Coefficient	.093	
		Sig. (2-tailed)	.272	
		N	142	
	Academia.edu	Correlation Coefficient	.018	
		Sig. (2-tailed)	.829	
		N	142	
	YouTube	Correlation Coefficient	.275**	
		Sig. (2-tailed)	.001	
		N	142	
	**. Correlation is significant at the 0.01 level (2-tailed).			
	*. Correlation is significant at the 0.05 level (2-tailed).			

Table 6.49 presents the correlations of smart phone and online learning activities, using the Spearman test. The main purpose of performing this test was to find out if there any association between smartphone, online tools and LMS in learning. It is interesting to note that there is a positive, significant correlation of 0.05 between smartphone and online learning activities. Of the thirteen items listed in the questionnaire that measure the frequency of learning activities on the web, nine items were found to be statistically significant at .05 level between smartphone and learning activities on the web (Table 6.49).

According to these results, there is a positive association between using online tools in learning such as Facebook, Twitter, Academia.edu and LinkedIn and smartphone use, while there is no association between LMS use and smartphone use. This suggests that the students tend to use smartphone for accessing these tools and applications for learning purposes.



Table 6.49 Spearman's rho Correlations 'Smart Phone' versus 'Online Learning activities'

		Smart phone	
Spearman's rho	Use the web to browse or search for information (e.g., news and events)	Correlation Coefficient	.116
		Sig. (2-tailed)	.167
		N	142
	Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	Correlation Coefficient	.248**
		Sig. (2-tailed)	.003
		N	142
	Use the web for instant messaging/chat (e.g., MSN)	Correlation Coefficient	.297**
		Sig. (2-tailed)	.000
		N	142
	Use the internet for social networking (e.g., Facebook and MySpace)	Correlation Coefficient	.442**
		Sig. (2-tailed)	.000
		N	142
	Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	Correlation Coefficient	.250**
		Sig. (2-tailed)	.003
		N	142
Use the internet for resources making and sharing with other (e.g., delicious, wikis and blogs)	Correlation Coefficient	.146	
	Sig. (2-tailed)	.084	
	N	142	
Use the internet for watching/sharing video (e.g., YouTube)	Correlation Coefficient	.215*	
	Sig. (2-tailed)	.010	
	N	142	
Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	Correlation Coefficient	.153	
	Sig. (2-tailed)	.068	
	N	142	
Use the internet in collaborating of ideas (e.g., wikis and blogs)	Correlation Coefficient	.305**	
	Sig. (2-tailed)	.000	
	N	142	
Using Facebook to communicate with and collaborate on ideas with others	Correlation Coefficient	.465**	
	Sig. (2-tailed)	.000	
	N	142	
Using Twitter for finding and following people activities	Correlation Coefficient	.237**	
	Sig. (2-tailed)	.004	
	N	142	
Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)	Correlation Coefficient	.209*	
	Sig. (2-tailed)	.012	
	N	142	
Use the web to access a portal, learning management system	Correlation Coefficient	.052	
	Sig. (2-tailed)	.542	
	N	142	
**. Correlation is significant at the 0.01 level (2-tailed).			
*. Correlation is significant at the 0.05 level (2-tailed).			

### 6.3.4 Correlation between Personal and Learning Activities on the Web

The study also undertakes bivariate correlation, using Spearman's rho, used to test the relationship between two variables. In item one "Use the web to browse or search for information (e.g., news and events)", as shown in table 6.50 A, the Sig value is .000 ( $p < .01$ ) (which is less than .05), indicating a significant correlation between

use of the web to browse or search for information in personal purposes and using it for learning purposes. The value of the Spearman correlation range was close to 1 and represents a positive correlation (as one variable increases, the other also increases). According to this result, it can be hypothesised there is a positive relationship between these two items, since the Spearman correlation value is .502 and it is significant.

Table 6.50 A. Bivariate Correlation ‘Use the web to browse or search for information’, Personal versus Learning Activities

			Use the web to browse or search for information (e.g., news and events)	Use the web to browse or search for information (e.g., news and events)
Spearman's rho	Use the web to browse or search for information (e.g., news and events)	Correlation Coefficient	1.000	.502**
		Sig.(2-tailed)	.	.000
		N	142	142
	Use the web to browse or search for information (e.g., news and events)	Correlation Coefficient	.502**	1.000
		Sig.(2-tailed)	.000	.
		N	142	142
**. Correlation is significant at the 0.01 level (2-tailed).				

All other items indicate a similar result and the correlations were considered to be significant. All these tests are attached in Appendix H:

- Use of the web to send or receive email (e.g., Hotmail, Yahoo, Gmail) for personal and learning purposes were strongly correlated, Spearman correlation = .714,  $p < .01$ . Value is less than .05. (Table 6.50 B, Appendix H). In other words, those who are more likely to use the web to send or receive email for personal purposes are also more likely to use the web to send or receive email for learning purposes.
- Use of the web for instant messaging/chat (e.g., MSN) for personal and learning activities were moderately correlated, Spearman correlation = .620,  $p < .01$ . Value is less than .05. (Table 6.50 C, appendix H). Therefore, it can be concluded that those who are more likely to use the web for instant messaging/chat (e.g., MSN) for personal purposes are also more likely to use the web for instant messaging/chat (e.g., MSN) for learning purposes.

- Use of the internet for social networking (e.g., Facebook and MySpace) for personal and learning activities were moderately correlated, spearman correlation = .670,  $p < .01$ . Value is less than .05. (Table 6.50 D, Appendix H). Therefore, it can be concluded that those who are more likely to use the web for social networking for personal purposes are also more likely to use the web for social networking for learning purposes.
- Use of the internet for sharing photographs or/and digital materials (e.g., Flickr) for personal and learning activities were moderately correlated, Spearman correlation = .666,  $p < .01$ . Value is less than .05. (Table 6.50 E, Appendix H). It can be concluded that those who are more likely to use the web for sharing photographs or/and digital materials for personal purposes are also more likely to use the web for sharing photographs or/and digital materials for learning purposes.
- Use of the internet for resources making and sharing with others (e.g., delicious, wikis and blogs) for personal and learning activities were moderately correlated, Spearman correlation = .593,  $p < .01$ . Value is less than .05 (Table 6.50 F, Appendix H). It can be concluded that those who are more likely to use the web for resources making and sharing with others for personal purposes are also more likely to use the web for resources making and sharing with others for learning purposes.
- Use of the internet for watching/sharing video (e.g., YouTube) for personal and learning activities were moderately correlated, Spearman correlation = .544,  $p < .01$ . Value is less than .05. (Table 6.50 G, Appendix H). It can be concluded that those who are more likely to use the internet for watching/sharing video for personal purposes are also more likely to use the Internet for watching/sharing video for learning purposes.
- Use of the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs) for personal and learning activities were moderately correlated, Spearman correlation = .613,  $p < .01$ . Value is less than .05, (Table 6.50 H, Appendix H). It can be concluded that those who are more likely to use the internet for contributing and developing content for personal purposes are also more likely to use the internet for contributing and developing content for learning purposes.

- Use of the internet in collaborating of ideas (e.g., wikis and blogs) for personal and learning activities were moderately correlated, Spearman correlation = .613,  $p < .01$ . Value is less than .05. (Table 6.50 I, Appendix H). It can be concluded that those who are more likely to use the internet in collaborating of ideas for personal purposes are also more likely to use the internet in collaborating of ideas for learning purposes.
- Using Facebook to communicate with and collaborate on ideas with others for personal and learning activities were strongly correlated, Spearman correlation = .761,  $p < .01$ . Value is less than .05. (Table 6.50 J, Appendix H). It can be concluded that those who are more likely to use Facebook to communicate with and collaborate on ideas with others for personal purposes are also more likely to use Facebook to communicate with and collaborate on ideas with others for learning purposes.
- Using Twitter for finding and following people activities for personal and learning activities were moderately correlated, Spearman correlation = .656,  $p < .01$ . Value is less than .05. (Table 6.50 K, Appendix H). It can be concluded that those who are more likely to use Twitter for finding and following people activities for personal purposes are also more likely to use Twitter for finding and following people activities for learning purposes.
- Using Academia.edu/LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field) for personal and learning activities were moderately correlated, Spearman correlation = .631,  $p < .01$ . Value is less than .05. (Table 6.50 L, Appendix H). It can be concluded that those who are more likely to use Academia.edu or/and LinkedIn for collaboration for personal purposes are also more likely to use Academia.edu or/and LinkedIn for collaboration for learning purposes.

### ***6.3.5 Correlation between Students' Attitude and Beliefs of Using Online Tools***

Bivariate Correlation was conducted in this stage to determine if the two variables (students' attitude towards using various online tools within LIS course and their beliefs of using these tools at future workplace) are related to each other. Table 6.51 A indicates bivariate correlation, using Spearman for first two items "Using various internet applications improves my collaboration with others" and "Using various

internet applications would improve my collaboration with others”. The results reported in Table 6.51 A indicate that there is a significant correlation between respondents’ attitude and their belief in this item, the Sig value is .000 ( $p < .01$ ) (which is less than .05), and the Spearman correlation value is .533, and it is significant. It can be concluded that a student who sees various internet applications as an important tool for their future workplace is more likely to use these applications within LIS courses.

Table 6.51 A. bivariate correlation ‘Using various internet applications improves my collaboration with others’ versus ‘Using various internet applications would improve my collaboration with others’

			Using various internet applications improves my collaboration with others	Using various internet applications would improve my collaboration with others
Spearman's rho	Using various internet applications improves my collaboration with others	Correlation Coefficient	1.000	.533**
		Sig.(2-tailed)	.	.000
		N	140	140
	Using various internet applications would improve my collaboration with others	Correlation Coefficient	.533**	1.000
		Sig. (2-tailed)	.000	.
		N	140	140
**. Correlation is significant at the 0.01 level (2-tailed).				

The same tests were performed to other items. The results are reported as follows:

- The two items “Using various internet applications makes me competitive in seeking employment” and “Using various internet applications would make me competitive in seeking employment” were moderately correlated,  $r = .497$ ,  $p < .01$ . Value is less than .05. (Table 6.51 B, Appendix H)
- The two items “YouTube supports my understanding of IS field” and “YouTube would support my understanding of IS field” were moderately correlated,  $r = .548$ ,  $p < .01$ . Value is less than .05. (Table 6.51 C, Appendix H).
- The two items “Facebook facilitates my collaboration with others” and “Facebook would facilitate my collaboration with others” were moderately correlated,  $r = .547$ ,  $p < .01$ . Value is less than .05. (Table 6.51 D, Appendix H).

- The two items “Twitter helps me to collaborate with others by following and finding other people activities” and “Twitter would help me to collaborate with others by following and finding other people activities” were moderately correlated,  $r = .502$ ,  $p < .01$ . Value is less than .05. (Table 6.51 E, Appendix H)
- The two items “LinkedIn and/or Academia.edu enable me to learn more through collaboration with others” and “LinkedIn and/or Academia.edu would enable me to learn more through collaboration with others” were moderately correlated,  $r = .663$ ,  $p < .01$ . Value is less than .05. (Table 6.51 F, Appendix H)
- The two items “Overall, using various internet applications allows me to prepare myself in future job market” and “Overall, using various internet applications would allow survive in job market” were moderately correlated,  $r = .427$ ,  $p < .01$ . Value is less than .05. (Table 6.51 G, Appendix H)

## Chapter 7 The Case Studies

### 7.1 Introduction

In order to drill down further into the contexts in which online tools were used, this chapter introduces case studies based on qualitative data that was collected by face-to-face interviews involving two academics interviewed in “Stage 1” who teach or have experience teaching a course related to online tools such as blogs and LinkedIn. It also involved a group interview with ten students who have completed the relevant course regarding the use of online tools in the classroom and/or within the curriculum, as well as an interview with one PhD student who had completed the online class. Qualitative data was also collected from online class observations and reviewed documents. This was the final stage, conducted after the interview stage and initial survey results. The primary goals of the case studies were to:

- Explore the actual use of online tools in the classroom; and
- Explore student attitudes and perceptions towards learning using online tools in the classroom.

This chapter is divided into three sections. The first section details demographic information about participants. The second section discusses the main finding of Case Study One with a brief description of the case. Data was collected from the interviews and reviewed documents, although access to documents was limited to the course description and a list of students’ projects. The third section provides the main findings of Case Study Two, which includes two interviewees (an academic and his student) and online class observations.

### 7.2 Demographic Information

Two academic staff members from DIS were interviewed. Both interviewees were assistant professors, and both had taught several IS courses related to ICT. They were aware of many online tools such as Facebook, Academia.edu, LinkedIn, and blogs. They had used and adopted such tools in teaching IS courses. Both participating

academics had used LMSs (e.g., Moodle) in teaching, and reported that they used laptops and smartphones to access the internet.

A group of ten students were invited for face-to-face interviews. All interviewees agreed to participate in a group discussion. All of them had taken a class that used the LMS Moodle except the PhD student who was interviewed in Case Study Two. Table 7.1 lists the interviewees and their details for Case Study One. All participating students in Case Study One were in their final year, and expected to graduate in 2013. In order to identify all interviews and interviewees, the interviewees will be referred to by the letters and numbers used in this Table 7.1.

Table 7.1 Demographic Information of Participants in Case Study One

<b>Participant No.</b>	<b>Gender</b>	<b>Academic year joined</b>
<b>S 1</b>	F	2009
<b>S 2</b>	M	2009
<b>S 3</b>	F	2009
<b>S 4</b>	M	2009
<b>S 5</b>	M	2009
<b>S 6</b>	M	2009
<b>S 7</b>	F	2009
<b>S 8</b>	M	2009
<b>S 9</b>	F	2009
<b>S 10</b>	F	2009
<b>Total=10, F=5, M=5</b>		

The aforementioned PhD student was interviewed in Case Study Two after course completion to explore her attitude towards using an online tool (LinkedIn) in an online course.

### **7.3 Case Study One: Interviewing Academic and a Group of Students**

#### ***7.3.1 Case Study One (Brief Description)***

The interviewee (instructor) used and adopted blogs through teaching two IS courses, Information Technology and Subject Analysis Courses. In the first course, the instructor aimed to teach students how to establish and design a blog, adding all the necessary characteristics to create an effective blog for publishing and creating content. Students were required to shape their blogs for their learning and to support their course understanding. According to the conversation held between the



instructor and the researcher, the main purposes of the adoption and use of blogs by the instructor in the first course were to:

- Provide students with the ability to explore and use newer technology through discovering blogs and the possibility of shaping them in personal use; and
- Provide students with the ability to design a blog and explore its functions and characteristics rather than use it for participation and discussion of topics related to the course. This included learning how to design an effective blog, using all possible characteristics and functions available on the blogs, and to give them an opportunity to ‘own’ and ‘manage’ their learning experiences within and across courses.

During the 15 week semester the design of blogs went through different stages. In the first stage, which took six weeks, students were asked to establish and create their own blogs. In the second stage of the course, which took a six further weeks, students were asked to demonstrate creativity and innovation in designing blogs through learning and applying new features to their blogs, for example, adding an RSS feed to the blog. The assessment in this stage was of their ability to make innovative use of different characteristics and features available in the blogs.

In the second course, the students were asked to show their understanding and support the course content by adding and creating content related to specific topics in the course in their blogs. The course was focused on the thesaurus and related topics; therefore, the students were required to select topics related to this domain in order to expand their knowledge in this area and create blogs with learning functions. This required students to search the information and review the literature in order to expand their knowledge in the selected topic, and then organise and manage the content on the blog; it was an assignment presented as a blog rather than a paper. This assignment was worth 10 marks out of the total marks for the course.

In this stage, the students did not assess the design of their blogs, but through their ability to add and create content, adding resources, links, and participation, and design a blog on a specific topic which helped others understand and gain relevant knowledge. At the end of the semester, students were required to present their blogs

to other students and explain how it helped them to support their course understanding, using either Microsoft PowerPoint or browsing their blogs.

The instructor explained the main purpose of using blogs in both courses as follows:

The aim of establishing the blog in the first place was just to train students how to design it, therefore I did not specify a particular topic, and I gave the students the freedom to choose the topics they wanted, regardless of their specialisation topics... The aim of establishing the blog was to qualify students to deal with this type of application, and to prepare scientific research through the student's ability to make use of the blog for this purpose, which means converting the research and integrating it into the blog, focusing on: the research topic, introduction, links, pictures, and relevant video... Then the students move to the other course where the blogs are being run effectively, giving the students the opportunity to communicate by seeing the other blogs and commenting on the content. This process is considered to be an investment in what was covered in the first stage... One of the blog's objectives is to facilitate the communication process, by giving the students the opportunity to communicate and collaborate with each other...

### ***7.3.2 Interview Findings***

Data from the interviews and reviewed documents were combined in the analysis in order to produce greater insight and findings. While the interview findings indicate the students' and academics' attitudes towards this online tool (adopting blogs in the classroom or within the curriculum), the documents and other online activities can offer other results that might demonstrate successful use, or otherwise, with regard to what the academics and students reported. The section is divided in three main sub-sections as follows:

- Learning in this course with this tool;
- Difficulties in learning with this tool; and
- Willingness to use this tool in the future.

### 7.3.2.1 Learning and Innovations within a Blog

#### 7.3.2.1.1 *Blog and Learning Process*

Students were asked about learning with blogs. Six out of ten students reported that using blogs within education was a good experience and support the educational process. The students showed a positive attitude towards using blogs within the course:

A blog is considered a recently emerging communication tool. It is an interactive tool that allows us to comment and add content. In my opinion, blogging is very important to us regarding the learning process, it enriches the discussion between us as well as information sharing. (S 1)

I took advantage of this great tool by getting a lot of knowledge and experience, accompanied by some pleasure in preparing many of the blogs. Learning with the blog created a suitable environment where I could communicate and collaborate with my peers. In addition, the blog created a network with others through their participation with my blog and commenting on the content. (S 2)

A blog is an important application in the learning process because of the diversity of the methods of displaying information and the possibility of sharing it with others. (S 7)

Using these modern technologies, especially the Web 2.0 technologies, helped a lot in the learning process. When we used the blogs in some courses we noticed the benefit from them. They were designed to have different features that allow effective interactions. (S 10)

Using blogs is useful in education, because it is a good way to communicate and interact with others. (S 6)

The instructor was also asked about using blogs within the courses:

Using blogs can support the learning process by allowing for communication and cooperation among the students. These tools can be used as a channel for communication and for information and knowledge sharing. For the professor, the blogs contribute to the diversification of the teaching methods and support interaction with the students. This did not exist and was not available before, thus the process of communication became better and more effective by using these tools...a blog contributes to the educational process by improving the student's ability to write through his search to gain knowledge. A blog is a tool that helps students to understand the course better; when we ask the students to write about the thesaurus, its forms and its classification methods, the students will gain an in-depth knowledge of these subjects.

However, two students claimed that blogs were not examined appropriately in the course. For example, one student claimed that:

In this course, the study of blogging was focused on design...without activating its role in education, for example, supporting the educational process or learning process. (S 3)

In summary, it seems that blogging helps students in their learning and to improve their communication and interaction with others. This reflects a positive response to the use of these tools in higher education, and therefore supports the results from the questionnaire regarding students' attitude towards use these tools within LIS courses (attitudes and beliefs).

#### *7.3.2.1.2 Online Communication and Collaborative Learning*

Students were asked about collaboration and communication activities using blog online tool. The question was whether blogs make contributions to improve communication and collaboration activities. The main purposes for asking this question were to explore the contribution of these tools in communication and collaboration activities and to compare these findings with the results from previous stages, survey and interviews. All students participated in discussing this point, except one who had no opinion. Five students explained explicitly that blogs helped

them communicate and collaborate with their peers, claiming that blogging offered a new opportunity for collaboration through working together and sharing knowledge and experience. Examples are provided below:

The blog environment gave me a chance to have intimacy and cooperation with my colleagues in order to create the blogs by working with each other where each of us has certain experience, different styles, and special ways of using and designing blogs. This allowed for some cooperation between us in the process of setting up the blogs, expressing our views, and bringing our different viewpoints relating to the design, structure, and inclusion of topics. By doing this, a blog will establish a communication network between us through the other participation and comments on my blog as well as my comments on other blogs. I think that the blog added another way of cooperation made available to us ... (S 2)

On the educational side, the blogs helped in having positive interaction. It actually increased the level of the course by helping me to participate more in the course and to communicate with others by sharing our experiences and different viewpoints. (S 10)

The blogs are a new method of communication between me and the participants, to take advantage of the comments and to exchange opinions about the topics that are listed in the blogs. (S 9)

Regarding communication and collaboration, it is considered one of the interactive applications that allow a person to communicate with others through comments and postings. Furthermore, a blog can be a way to cooperate, for example, in exchanging and sharing information. (S 3)

The process of communicating with the other students, participating and responding to others by posting and commenting on their blogs, is an advantage of using these blogs. (S 4)

... this is an attraction to the learning process and the expansion of knowledge and communication between students and the exchange of views and perspectives on the blog. (S 7)

The instructor reflected on this by reporting that:

...Using blogs enhances the process of communication and cooperation among students, which generates more interaction both between student-student or student-professor by discussing the problems and putting forward various related issues...I think that blogs play an important role in students learning through knowledge sharing and participating in the content, and therefore I am convinced that this is a successful tool for sharing information.

On the other hand, one student believed that there was only a superficial level of cooperation involved in using the online tool:

I think there was no cooperation, because the students' participation on this application was only because of assessment, only for evaluation and to get good marks. (S 6)

Another student preferred face-to-face communication:

There is a kind of interaction by using the blog, however, I prefer face-to-face communication ... discussing an issue on the blog might be understood in a different way, while face-to-face may solve the problem of a lack of understanding, and will answer other inquiries related to the topic. (S 1)

The same student reported that the course focused more on the design side rather than using and shaping blogs for discussion and communication purposes.

...in this course, the blog was a project we accomplished and we did not have the opportunity to deepen the interaction more... We used the blog as an assignment in another course and it facilitated the process of understanding and capturing information easily, because it contains text, images, and forms. (S 1)

Two other students made a similar point:

I can say from my point of view that the objective of teaching us the blogs was to design a blog. I think that using the blogs taught me some new features, for example, how to bring information from the source and interact with the audience. However, I did not find it as interactive as it is supposed to be. (S 8)

There was no time for cooperation because most of our time went into the establishment of the blog. It was designed for the purpose of the course. The course ended and we did not use it for the process of interacting and the exchanging of opinions...I think that the main objective of the course was to design a blog, not for discussion... according to this course, the blogs were focused on the design side only, so its benefit was limited to the design without activating its actual role in education. (S 3)

Table 7.2 below provides a list of blogs created by students. A review of these online blogs showed that no comments were posted by students in their blogs or even in other students' blogs. Most students created blogs and added content to their blogs regarding topics discussed in the classroom by the instructor. However, very few blogs were blocked after course completion.

Table 7.2 Examples of Students' Blogs

Student	Title of the assignment	Blocked by students	Posts by others
A	List of standard Arabic Subject Headings	No	No comments were found on the site
B	Thesaurus of Waqf Sciences	No	No comments were found on the site
C	Thesaurus of Waqf Sciences	No	No comments were found on the site
D	Agricultural thesaurus	Yes, blog not found	
E	Thesaurus of folklore	No	No comments were found on the site
F	Comprehensive Thesaurus	No	No comments were found on the site
G	Thesaurus	No	No comments were found on the site
H	Expanded thesaurus22	No	No comments were found on the site
I	Expanded thesaurus	No	No comments were found on the site

It appears that some students may block others from posting content. All students used the blogs to publish the content related to their discussion topics in the classroom. As noted above, other students blogged due to assessment requirements.

They reported that the benefit of using blogs was limited to the course as everyone stopped blogging after course completion. For example, one student reported that:

I would like to talk about my self-evaluation regarding the use of blogs in this course. I got benefits from blogging, however, this benefit was limited to the course and we stopped doing this (blogging) after the course ended. (S 4)

It was also apparent from the blogs reviewed that most students used a variety of ways to design their blogs and add relevant content using different sources. It is important to note that most students reported that blogs were easy to design, and this was observed from reviewing the blogs (see Figure 7.1). However, it was found that students did not participate in their peers' blogs and most spent their time establishing and adding content to their own blogs without participating and posting content on others.

Figure 7.1 Applying Different Characteristics of Blogs in Designing



This section gave a clearer understating regarding student attitudes toward online communication and collaborative learning within using these tools. These findings



will be a combined and compared with the similar findings from the interviews (Stage 1) and the questionnaire (Stage 2) in Chapter 8 to produce greater insight regarding these activities.

#### *7.3.2.1.3 Understanding Course Content: “Owning” and “Managing”*

Most of the students reported that blogs gave them the ability to understand the course content by searching for the information from various sources and organising it in the blogs. They were able to use different characteristics which support content, including images and videos. For example, one student reported that blogs worked as multimedia by combining text, images, and video, with different content forms:

...if we go back to the information that we got from the papers or printed materials, in this case, we cannot add these explanatory materials to the discussed topic, such as pictures, videos, and so on. However, a blog gives us a chance to interact through the possibility of adding various images and video, and uses a combination of different content forms, which allows more interaction. Consequently, when we browse or navigate these blogs we can read the text and watch a video that relates to the text at the same time, and we can comment and add notes about the topic. (S 4)

The use of blogs as multimedia to support understanding of course content makes blogging a popular tool for students. For example, two students reported that:

My point is that the blog is a tool, a technique, and a new method that can be used in education, specifically in preparing lectures and lessons, instead of using other traditional tools such as PowerPoint, which becomes boring because in most cases its use overstates ... the blog grabs the learners' attention since it is a new tool for them, and that in itself will put the information forward. This will increase the consolidation of the information in the student's mind through participation and discussion. This is a unique feature that makes a blog different from other tools... (S 2)

The blogs helped me to understand the course's content better, by delivering information using multimedia, such as videos, images, audio, and text. The learner needs a shorter time to understand the material through it because a picture can express a thousand words, and as I mentioned before, it includes multimedia...it facilitated so many things and gave me a chance to publish my information, which I have and I want to share with others and get benefits from the other material published by others. (S 9)

Two other students reported that:

...the blogs also contribute to supporting learning and teaching in many educational institutions, because they offer many advantages and variety in the presentation of the information and they support images, videos, and news related to the specific topic. (S 7)

... it seemed to add value because of the fact that it brings together more than one form (a combination of text, images, video, etc.). You can integrate video with an image with text, for example, to add specific information, and this can contribute to the enrichment of the courses, but only if they apply it appropriately. (S 3)

An objective of the instructor was to change the teaching style and the way of delivering course content to the students, through giving students the ability to own and manage their blogs:

When one method or tool is used in teaching, the students will get bored and the information will be stored in their minds from the same perspective each time. Therefore, using more than one way to teach is recommended to facilitate the process of information access in the students' minds. For example, the results of using the method of memorisation or displaying information only leads to a kind of non-acceptance of the content by the student due to the ineffectiveness of the method used to deliver the information, while the use of different techniques and tools makes it easier for the students to receive the information and consolidate it in their minds. Therefore, different methods of

delivering information to students should be used. One of the successful methods is by using blogs, for they provide an opportunity for students to express and write and contribute by searching for information...students must contribute to the reinforcement of their knowledge by researching and participating in creating knowledge.

#### *7.3.2.1.4 Blog Characteristics as an Open Platform*

Students were asked about the possibility of using blogs within the course and in future workplaces, and about blog characteristics not found in traditional LMSs. Four important characteristics of blogs were reported by the students: it remains “on” before, during, and after course completion; allows the freedom to add content, customise profile pages, and own workspaces; provides more privacy options; and is easy to use. For example, most students found that the blogs were more useful in terms of facilitating students’ participation and discussions on platforms that will be available to them after graduation. For example, two students reported the following:

It actually increases the level of the course and helps us to participate and communicate with others in sharing our experiences and different viewpoints. My point of view is that blogs have a positive side and are more interactive than Moodle. (S 10)

Compared with Moodle, blogs are considered the best in the learning process due to different features that are not found in Moodle, and which facilitate our participation and discussions after course completion. (S 7)

Two other students reported that blogs are an open gate which can be accessed after course completion. For example, the female student reported:

By comparing it to Moodle, it is more useful than Moodle because it can be accessed at any time whenever there is internet service. Unlike Moodle, which ends after course completion. (S 1)

Similarly, another student reported:

The blog helps the person to learn and display his ideas and to discuss them with others at any time. From my personal viewpoint, the blog helps me to find information, as it contributes to sharing information when participating with others. The blog is good for communication and presenting ideas and for circulating the information... (S 6)

Other students reported that the blogs gave them more opportunities and options to manage their learning experiences through the freedom to add content, customise profile pages, own workspaces, and allow the use of pseudonyms.

I found it better than Moodle, whether in the way of finding information. It was more attractive to use, and easier navigation...in terms of organise and classify the topics and the possibility of evaluating it. It gives us the opportunity to create various links, which enables users to move to different topics or other blogs about the same area. (S 3)

... blog allows me to have a discussion by introducing some of the topics and discussing them with my colleagues. It gives me the chance to hide my name by using an alias or pseudonym. This gives us an opportunity to have more freedom of expression compared to Moodle, which is a formal tool in education that shows the student's name and statements, especially for some of us who are shy about communicating face to face. (S 2)

The fact that the blog is a way to avoid censorship in spreading information and it gives individuals freedom of expression. Thus, it contributes much to solving some problems or making decisions about the posed issue... (S 7)

The instructor also added that blogging provided more privacy properties than other online tools, such as Facebook which has a strict policy against the use of pseudonyms. He reported that:

A blog provides students with a group of options, such as the ability to access these blogs on the internet or maintain the user's privacy in the case that it is not available on the network. What characterises blogs from other Web 2.0

applications like Facebook is the availability of the privacy properties... Most of the privacy properties are not available in the other social networks, such as Facebook, and because of our society's nature, customs, and traditions, many of the female students avoid using some of the other applications that may reveal their identities or personal information. They usually use nicknames when designing blogs for reasons related to their privacy, including the dissemination of information and sharing personal data, and other cultural and social factors.

This report supports the findings from the questionnaire, (Chapter 6) regarding safety and privacy concerns, and it explains gender differences regarding blogging and Facebook. Safety and privacy concerns are one of the issues influencing the use of these tools. Chapter 8 will delve more deeply into discussion the reasons regarding gender differences.

All students reported that blogs were easy to use and there was no need for advanced skills to learn how to design them or to add content. For example, three of them reported the following:

In addition to the possibility of commenting on the topics and the interaction between the blogger and readers where they relay their views and perspectives on the subject. A blog is easy to use in terms of design and navigation. (S 10)

Using blogs is very easy in terms of design (S 9)

...the process of designing a blog was a new experience for me; it was not difficult, but so easy and flexible. Any student can design a blog, they do not need to have skills such as designing a site using different software. (S 4)

However, one male student found Moodle to be more effective in terms of participation:

I say that Moodle is more effective than blogging according to my use; I use Moodle and do practice on it more than using and practicing on blogs. (S 8)

Another male student pointed out that he did not take advantages of using blogs with regard to the participation and interaction. He reported that:

I believe that the use of blogs in our society is a good thing, but this depends on how we use it. Will internet services in our community be available everywhere, so that the beneficiary can post other comments at any time? What I learned from the blog was knowledge regarding design. However, in terms of participation and interaction, I did not take advantage of these for a number of reasons, such as the students, instructor, and other things. (S 6)

In response to the question of his role in the process, the instructor replied:

I have not added comments, but I would encourage this process among the students themselves. They were asked to comment on the blogs of their colleagues, thus creating a social network among the students. The role of the teacher is in the process of evaluation.

In summary, most students and the instructor found blogs useful in terms of facilitating student participation and discussion in platforms that will be available to them after graduation, compared to the LMS Moodle. Blogging is an open gate which can be accessed after course completion and students will have the ability to customise, own, and manage their blogs, which supports their learning experiences within and across courses. As a previous section indicated, using blogs as a multimedia tool improved students' understanding of course content by giving them the ability to own and manage their blogs. These results are valuable in supporting the findings from the interviews and survey. When combined, it will produce greater insight regarding "online tools as open platform versus LMS" which will be discussed in Chapter 8.

#### 7.3.2.2 Willingness to Use Blogs in the Future

In this section, students were asked about their willingness to use blogs in the future. Nine students discussed this point, but one male student did not participate in the

discussion as he had no opinion regarding this. Six of the remaining nine showed their willingness to use blogs in the future as shown in Table 7.3.

Table 7.3 Respondents' Willingness to Use Blogs in the Future

Number	Gender	Respondents' Willingness to Use Blogs in the Future		
		Yes	No	No opinion, or do not know
S 1	F	*		
S 2	M			*
S 3	F	*		
S 4	M	*		
S 5	M		*	
S 6	M		*	
S 7	F	*		
S 8	M		*	
S 9	F	*		
S 10	F	*		
Total	10	6	2	2
		F=5; M=1	F=0; M=3	F=0; M=1

For example, one male student reported that:

I really have the desire to use this type of application because it will add a new dimension to the institution where I will work, especially as a marketing tool.  
(S 4)

Three female students reported that they intended to use blogs in the future:

I intend to use this kind of technology in the future (blogs), within and without the institution; there are many reasons that motivate me to use it. I think it is very helpful in the communication process and in constructive interaction, which is a way to pass information and expertise on and share it. (S 10)

I have a desire to use blogs in the future in the enterprise/institution that I will work in, as well as for personal aspects, because it has a value in delivering information to others and interacting with them to learn and benefit from their expertise. (S 1)

Yes, I would like to use it in my career, because it can be a way to achieve my marketing goals. It is cooperative, educational, and interactive. (S 3)

On the other hand, a male student reported that he would use the application; however, he preferred to use newer emerging technology:

I would like to use blogs for different purposes in the future, including for education, cultural and entertainment purposes, and also for other purposes... However, if I find another alternative tool instead of a blog, of course, I will use the new tool. I am sure that new technologies will emerge in the future and will replace the old ones, with advantages and elements more splendid and easier to use, but each tool will have its own distinctive character. (S 2)

Two other male students showed their unwillingness to use blogs in the future for several reasons. One student reported:

In the future, I could use a blog in my daily life if the interaction and transmission of the information in our society and the ability of the society to shape this technology for different purposes exists, but if not I would not use it. It depends on the community's acceptance of new technologies and the possibilities of using it in the scientific and educational settings ... (S 6)

The other student unwilling to use blogs in the future stated:

Personally, I will not use blogs in the future because there are many other options and suitable alternatives that can be used more effectively than blogs, such as Facebook and Twitter. These tools are more effective, simple, popular, and appropriate for enhancing organisations. These technologies are more popular in our society and there are many groups that prefer to use social networks because of their ease of use and effectiveness. I found Facebook and Twitter to be more effective than blogs, and I think they will be more beneficial regarding communication and information exchange. (S 8)

The instructor also reflects that the students intended to use the blogs:

I think most of our students would have blogs in the future. I noticed that many of them already have blogs that they use for personal purposes.



In summary, asking students about their willingness to use blogs in the future for personal, learning, and/or professional purposes produced revealing responses and gender differences. As indicated in this section, most students (6 out of 10) showed their willingness to use blogs in the future. It is also apparent from the responses from this group of students that male students were less likely to have an intention to use blogs in the future compared with females. While all female students showed their willingness to use blogs in the future, only one male student reported the same. The reasons provided by those who were unwilling to use blogs were due to a non-conducive environment, and the emergence of new and popular online tools such as Facebook and Twitter, which can replace blogs. These findings also interpret gender difference regarding blogging as was indicated in the survey in section 6.3.1, and which indicated that among male respondents, half of them (50%, n = 19 out of 38) reported that they had blogged but did not do so anymore. They were less likely to have an intention to use blogs in the future than their females counterparts.

### 7.3.2.3 Difficulties Involved With Learning with Blogs

This section highlights the most important barriers related to student use and integration of online tools in their learning. The main barrier that faced students using blogs was the quality of the internet services, such as a slow internet connection. Nine out of ten students, as well as the instructor, reported this as an obstacle to using blogs within the course. These results were consistent with the findings from Stage One (interviews) and Stage Two (survey). Data triangulation will be employed in Chapter 8 to enhance the validity of these findings. Details of these barriers are presented below.

#### 7.3.2.3.1 *Internet is Slow*

It seems that slow internet services were the main difficulty for most students. Nine out of ten students reported this problem as an obstacle to using blogs within courses.

The main obstacle that remains that may impede the use of a blog is the lack of the progression of internet service and internet speed. I think that the availability of internet services in terms of speed, access, and quality would

motive us to use this online tool. However, no one wants to use blogs under the restrictions of the internet service in our society. (S 2)

The most difficult part of learning within this application is related to the limited internet services and internet slowness. (S 7)

Most of the difficulties we have encountered in regard to using the blog had to do with the internet service, because the network is slow sometimes. (S 1)

There is a difficulty, related to the internet services, that is the biggest factor for alienating people and moving away from using these technologies in education... the internet service does not have coverage all over the country and the exaggerated prices are making the users avoid using these learning tools, even for personal uses. (S 4)

There are no difficulties in using the blogs in regard to their characteristics and design, the difficulty is with the infrastructure of the internet, which is very weak, therefore browsing pages is very slow. (S 9)

I think that the main difficulty that we face regarding using these technologies is the acute shortage of the communications infrastructure that we have in this country...the internet services are inadequate in our society... (S 8)

This was also supported by the instructor who was not satisfied with the internet services in Oman:

...no significant difficulties, with the exception of two things: the time required in the follow-up posts students and their assessment, and the internet service, the internet is not at the required level at the university. It is too slow.

However, one female student indicated that this was not the main problem:

I think that the issue of the internet is very important, but we must consider the case from the beginning, which is the use of the process and the misdirection of

this technology. The evidence for that is when there is a new application; we cannot use it appropriately, even in education. So the main reason is not the internet service, but the lack of understanding about the benefit of these applications, and the lack of knowledge. (S 3)

#### *7.3.2.3.2 Computer Lab Annual Maintenance and Insufficient Computers*

A few students mentioned that the computer lab's annual maintenance was another problem which faced them while they used their blogs. For example, two of them reported that:

The difficulties are related to the existing internet services and the number of computers, which is very few. These are two factors that we considered to be obstacles facing our use of the blog. (S 10)

I think there are no personal difficulties facing me, rather, the difficulties are related to the internet service and the lack of sufficient computers. There are not enough computers for the students. (S 6)

The instructor also agreed with the students with regard to computer maintenance:

...there is a problem in regards to the number of students in the classroom and the periodic maintenance of the computers. In the laboratory, for example, there are some computers that do not work properly and they need regular maintenance, and hence most students use their personal computers to avoid this problem.

#### *7.3.2.3.3 Lack of Awareness and Web 2.0 Literacy*

Four students reported that lack of awareness could be the reason for not using online tools by others. For example, three students reported that:

The lack of awareness about this technology and its advantages is another barrier that prevents people from using it. (S 10)

...the lack of awareness about how to use this application on the part of individuals, and the lack of experience in how to design it. (S 7)

The lack of awareness of the community regarding blog influences its uses, and its positive yields of the communication process. (S 9)

Another student reported that some students copy information from online sources and just paste it into their blogs without mentioning the sources.

...Most of the students' participation was only cut and paste, so there is no reason to use it, and I did not find that there was any sophisticated and effective type of participation. (S 3)

Another student reported that the use of Moodle could be seen as a basic tool for teaching within the academic community:

The academic community might not accept the idea of using blogs in education, because they think that using Moodle is an alternative to teaching. (S 1)

#### *7.3.2.3.4 Teaching and Learning Style*

Teaching methods by some academics may not help students learn about online tools. Some academics prefer to use traditional methods in teaching. For example, two students reported that:

There is no encouragement regarding learning to use this application, whether from the schools, teachers, or faculty members at universities, colleges, and other educational institutions. They prefer the traditional way of teaching. (S 7)

The society is also a negative point, because it does not encourage using such teaching aids (blogs, etc.) in the schools and universities...it is important to have awareness, putting plans and programs in place to make the students qualified to use the technological and technical changes in education. (S 8)

### ***7.3.3 Summary of the Main Findings***

The information gathered from this case through interviews and reviewing of online blogs has produced some revealing responses which support the findings from both the interviews and questionnaire. In respect to the learning within blogs, most students (6 out of 10) and the instructor reported positively on their experiences regarding the use of blogs within higher education. They reported that blogging leads to improved communication and collaboration activities. However, one male student believed that there is no cooperation involved in using the online tool, and one female student indicated that she preferred face-to-face interaction rather than using blogs regarding communication and discussion. Two other students (female and male) indicated that the course focused more on design rather than utilising blogs for communication and collaboration activities.

Most of the students reported that blogs gave them the ability to understand the course content by searching for the information from various sources and then organising it in the blogs. The four important characteristics of the blogs were that they: remain “on” before, during, and after course completion; provide more opportunities and options to manage the learning experience by enabling the freedom to add content, customise profile pages, and own workspace; had more privacy options; and were easy to use. Most students (6 out of 10) reported their willingness to use blogs in the future. Male students were less likely to have an intention to use blogs in the future compared with females as also discussed in section 6.3.1 in Chapter 6. While all female students showed their willingness to use blogs in the future, only one male student reported the same. The main barrier that faced students using blogs was the quality of the internet services, such as a slow internet connection. Nine out of ten students, as well as the instructor, reported this as an obstacle to using blogs within the course. This result supports the findings from

Stage One (interviews) and Stage Two (survey). Data triangulation will be employed in Chapter 8 to enhance the validity of these findings.

On the other hand, based on the reviewed blogs, none of the students posted in other students' blogs, and the instructor's role was to encourage students to post in others' blogs rather than comment and post in their own blogs only. Students were more likely to learn about blogs, not within blogs. The use of blogs was focused on design and adding content, rather than on collaboration and communication activities, as indicated by the responses of several students as well as an analysis of their blogs. Students showed their ability to design blogs and found this online tool easy to use and useful regarding educational processes. Most students reported that the blogs were easy to use and design.

## **7.4 Case Study Two: Interviews and Online Class Observations**

### ***7.4.1 Case Study Two (Brief Description)***

As previously mentioned, this case included one academic and a PhD student. The academic adopted and shaped the LinkedIn application in teaching an online course (Seminar in Information Behavior). The student was required to create an account on LinkedIn for discussion topics and post any queries or ask questions related to the course. After the LinkedIn account was created, the main objectives and course description were provided in LinkedIn pages. The LinkedIn homepage was created at the beginning of the semester starting 18 September 2012, and continued for 15 weeks. The Figure 7.2 in the next page shows the course home page on LinkedIn.

During that time, the student and the academic discussed all the issues related to the course, and both of them used their smartphones and laptops to do so. The academic used Samsung Galaxy and Galaxy Note, while the student used Samsung Galaxy only. For a general discussion and to arrange their appointments, they used WhatsApp (cross-platform mobile messaging app) through their smartphones. The researcher had given access to online activities via the academic and with permission from the student in order to observe and follow their online activities. The researcher used his LinkedIn account to follow their activities and take notes.

Figure 7.2 Course Descriptions on LinkedIn

Home Profile Contacts Groups Jobs Inbox Companies News More Search... Advanced

[Earn MBA in just 6 Months - Study at your own Pace. Credit Transfer Available. Scholarship upto 90%.](#)

### ISIS6120 Seminar in Information Behavior

Discussions Members Promotions Jobs Search More... [Share group](#)

The purpose of this seminar is to provide PhD level coverage of the individual and social aspects related to human information needs, information-seeking behavior, and uses. It puts emphasis on the main related elements of the human seeking behavior such as the nature of information, constructs, concepts, models, theories and methods that an information scientist uses to study human information behavior. The course will also touch on the searching strategies and techniques, formal and informal sources of information and electronic resources utilized by users, and barriers affecting users' information behavior. Theories and models of information behavior, the assumptions underlying them, conceptual frameworks, and the factors which differentiate groupings of information users will be examined.

1st

2nd

**About this Group**

Created: September 18, 2012  
Type: Other...  
Members: 3  
Owner:

**Group Statistics**

Director  
Manager  
Entry

**CHECK OUT INSIGHTFUL MEMBERS**

Both the academic and the student were interviewed at the end of the semester in order to explore their attitudes toward using LinkedIn in teaching and learning. The main objectives of using this particular online tool within the course as outlined by the academic were to change the teaching methods and involve students in the educational process:

My philosophy on teaching is that instructor is not only the one who provides the information for students. Information can be provided by students. LinkedIn allow me to guide students to achieve the knowledge that they need and motivate them to read similar information and make them accessible through the system. In addition: to familiarise students with the online teaching environment, and to involve students in the learning process and make them more productive.

The findings from the interviews and online activities (observations) are provided in the next section.

### *7.4.2 Case Study Two Findings*

Data from the interviews and observations (online class) were combined and compared in the analysis in order to produce greater insight and findings. While the interview findings indicate the student's and the academic's attitudes towards this application, the online activities can provide data that might support what they reported.

#### 7.4.2.1 Towards the Term Web 2.0 and LinkedIn

The student was asked the following question: Are you aware of the 'Web 2.0' concept? Could you describe it? The student showed a good understanding of 'Web 2.0':

Yes. Web 2.0 as a term was introduced in 2004, and refers to the second generation of the www. It includes new features and functionality that was not available before, and a series of technological improvements. It provides a high level of users' interaction, dynamic websites, and information sharing. Some examples of Web 2.0 features are: blogs, wikis and social networking.

LinkedIn is more about interaction, collaboration, and creating content. The student was asked about LinkedIn as follows: Do you consider LinkedIn as one application of 'Web 2.0'? Why? The student answered:

Yes, I do, because LinkedIn adopted Web 2.0 characteristics which allow users to interact in different ways. For example, they can post content or ask questions, share data, download/upload videos or photos, collaborate with other people and so much more.

The academic also reported that LinkedIn is a 'Web 2.0' application which offers a new opportunity for learning and communication:

I believe that LinkedIn is a complete Web 2.0 application that can be used for learning and communicating.



#### 7.4.2.2 Useful and Easy Tool for Learning and Teaching

Both the academic and the student reported that LinkedIn was an easy and useful tool in education. For example, the student reported that:

From my experience of using LinkedIn within this course, it is a very useful and effective tool, place to share interests, ask questions, research organisations, and networking with professionals and graduates from a wide range of education and geographic locations.

The academic reported that using LinkedIn was easy; his smartphone gave him an opportunity to access LinkedIn at any time:

Through LinkedIn, I can communicate with student whether in group or individually. Most of the time, I use my smart phone (GALAXY NOTE II) to access the LinkedIn. It is easy and flexible.

According to the academic:

The main benefit is that students read and evaluate articles related to the topic before the actual lectures. During the actual lecture, I only discuss with them what they have posted in the LinkedIn and add a few other points related to the topic. Students also can locate lectures and access information through the web 24/7... LinkedIn is a good environment for discussing and sharing information.

This section also supports the findings from the Case One, interviews and questionnaire which reported that two of the characteristics of these online tools are ease of use and flexibility.

#### 7.4.2.3 Teaching Style and Communication Manner

LinkedIn contributes to teaching by enhancing teaching methods by changing teaching styles and communication manner. The academic was asked if his teaching style and communication manner had changed with the use of this application:

Definitely changed, I can now provide them with number of related electronic articles, websites, in addition to the lecture notes. This was impossible in the past when I have to print out all the references and hand them to students. Another issue is that not all students prefer to talk and discuss during the class time. This is due to many psychological factors.

The student also reported that using LinkedIn in the course changed the way she learned. She indicated that she had a new opportunity to learn in different ways.

Within LinkedIn I can learn in many ways: share information and resources, express opinions, ask questions, exchange experiences, etc. For example to ask questions. I can find answers under the “More” menu at the top of my homepage. Questions are automatically visible to everyone on LinkedIn, unless I choose to only ask my connections... it is changing the way I learn.

It seems that these tools contribute to the change in the way academics teach in the classroom. This also was mentioned by other academics in the interviews.

#### 7.4.2.4 LinkedIn as an Online Teaching Environment

Two main activities were identified through the analysis of online activities and from the interviews. Resources and information sharing, and using LinkedIn as a platform for course content discussion (posting and asking questions as an assignment). This created a form of online collaboration between the academic and the student. Several examples are provided below.

##### *7.4.2.4.1 Resources and Information Sharing*

The academic used LinkedIn to share resources and to recommend sources for students to read. It was used to provide the student with a description of a scholarly journal that could be used for the course as indicated in Figures 7.3 and 7.4. These figures also indicate student participation through generated content, including activities and contributions to collaborative resources. This also supports what academics reported in the interviews (stage 1) regarding using these tools within LIS

courses for resources and information sharing. This section provides actual examples in which online tools were used in teaching.

Figure 7.3 Example of Resources and Link Sharing Provided by the Academic on a LinkedIn Page

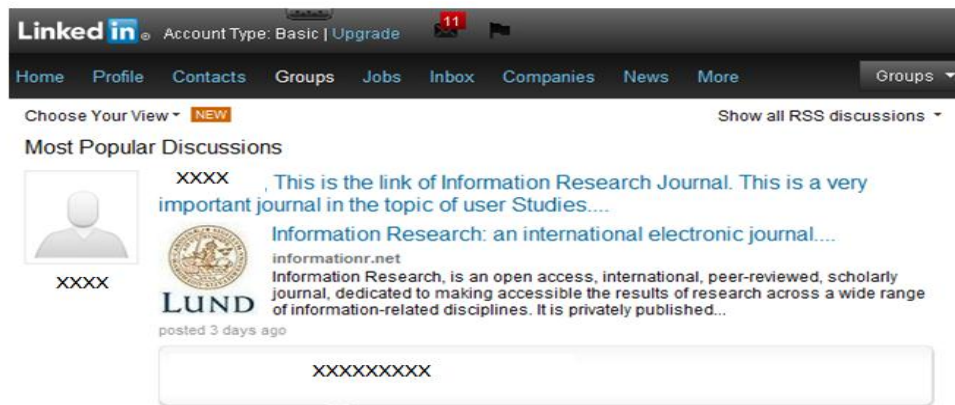
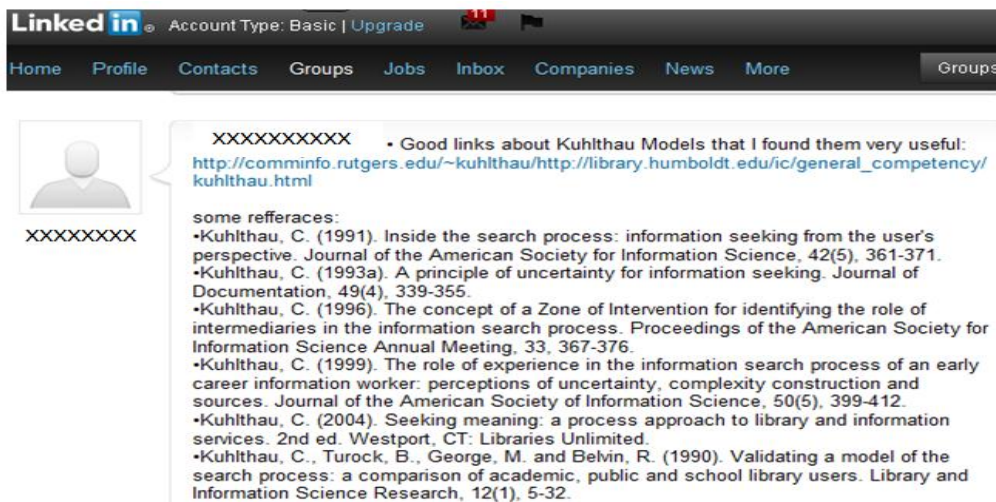


Figure 7.4 Example of Resources and Link Sharing Provided by the Student on LinkedIn Page



#### 7.4.2.4.2 LinkedIn as a Platform for Course Content Discussion

One of the main motivations for which the academic tended to use LinkedIn in teaching was to create a platform for course discussion:

I am using LinkedIn in all courses I teach for the following reasons. To create an online learning environment for students (online discussions of the subjects

we take in each course), to enable students to share and discuss ideas freely, and to enable students to enrich the course by searching for information related to the different topics and posting them in the LinkedIn.

This can be observed through online activities as shown in Figures 7.5 and 7.6. Figure 7.5 shows a question/assignment posted by the academic to his student.

Figure 7.5 Example of Topics Posted for Discussion on LinkedIn Page



Figure 7.6 shows example of an assignment posted by the academic which required the student to research information in scholarly journals. This also indicated that one of these activities was the use of LinkedIn as a discussion forum. As the academic noted:

The main activity of students is the online discussions... I allow students to start their discussions on the topic of the next week from the previous week. Overall, students discuss all issues related to each topic in the LinkedIn before the actual lecture begins. The second main use of the LinkedIn is when students submit their assignments and also when I send them the course materials. Students can download all lectures and associated articles from LinkedIn.

Figure 7.6 Example of An Assignment on LinkedIn Page

The screenshot shows a LinkedIn discussion post. At the top, the LinkedIn logo and navigation menu are visible. The post is titled "Analyzing your own Information Behavior" and is part of a discussion within a group named "ISIS6120 Seminar in Information Behavior". The post content includes three numbered instructions for an assignment. Below the post, there are interaction buttons for Like, Comment, Follow, Flag, and More. A user named "XXXXXXXXXX" has liked the post, and there are 4 comments. One comment is visible, starting with "XXXXXXXXXX" and describing a six-step information-seeking process.

**3 Month Mini MBA in Oman - Fast track MBA program for on-job adults. Improv**

**ISIS6120 Seminar in Information Behavior**

**Discussions** Members Promotions Jobs Search More...

**Analyzing your own Information Behavior**

1. Select and describe an information behavior from your life.
2. Select a model that seeks to describe or explain information behavior and analyze your information behavior using the model to interpret your behavior in. Your presentation of this analysis should be very linear and explicit. You must use additional published literature, beyond what we assigned for the class, to get information about the model you choose.
3. Based on your analysis of the model, please answer the following two questions: How did the model affect your interpretation of your information behavior? In what ways was the model useful for explaining your information behavior?

4 months ago

Like Comment Follow Flag More

XXXXXXXXXX likes this  
4 comments

XXXXXXXXXX

XXXXXXXXXX 1. Select and describe an information behavior from your life. My information seeking behavior follow six process which are: (1) start general thinking about the topic, this stage comes when I recognize that I need for new information to complete an assignment or a search ,and I may discuss the topic with others and brainstorm the topic. Then I put a plan or strategy for my search; (2) selecting specific information, in this stage I decide how the topic will be investigated and how to progress, and what information should retrieved regarding this topic so I start browsing library collection; (3) exploration, in this stage, the information about the topic is gathered and a new personal knowledge is created by Locating relevant information; note taking, cite sources; list descriptors (keywords); (4) formulation, in this stage, I start to evaluate the information that has been gathered; (5) collection, in this stage I know what is needed to support the focus and identify ideas that lead to focus on my topic to complete it. (6) finishing the search, in this stage, I summarize and report on the information that I found through the process, recheck sources for missed information and confirm information & citations.

Other examples of using LinkedIn for posting topics and assignments are indicated below (Figures 7.7 and 7.8). Figure 7.7 illustrates an example of an essay assignment for the student, while Figure 7.8 shows the submission of the assignment by the student.

Figure 7.7 Example 1 of the Assignment (Writing Essay) Posted by Academic on LinkedIn Page

The screenshot shows a LinkedIn discussion post. At the top, the LinkedIn logo and navigation menu are visible. The post is titled "USE OF E-RESOURCES" and is part of a discussion within a group. The post content discusses the impact of electronic resources on research. Below the post, there are interaction buttons for Like, Comment, Follow, Flag, and More.

**Discussions** Members Promotions Jobs Search More...

**USE OF E-RESOURCES**

Electronic sources have revolutionized the way research can be done. Those seeking information no longer have to physically go to the library but can stay at home or the office and merely need to log on to access online library information resources. The ease in which information can be retrieved online "can enable innovation in teaching and increase timeliness in research as well as increase discovery and creation of new fields of inquiry", and research has shown that many information-seekers prefer to use electronic resources and the Internet to obtain information quickly and easily.

Please explain how have e-resources changed the way scholars conducted scholarly research?

2 months ago

Like Comment Follow Flag More



Figure 7.8 Example 1 of Assignment (Writing Essay) by Student on LinkedIn Page

XXXXXXXXXX • Growing number of studies have shown that scholars' use of electronic information resources has increased significantly. As a result, they helped them improved their work considerably in several ways. Two dimensions of this influence can be observed. The first dimension is connected more to the improved access to, and availability of literature which positively associated with the number of international publications scholars product. Whereas, the second is more directly related to the content of scholarly work. Consequently, research has shown that many information-seekers prefer to use electronic resources and the Internet to obtain information quickly and easily, especially doctoral students, they seem to benefit more from the use of electronic literature in terms of the number of international publications.

In this regard and according to Bhukuvhani, Chiparausha, and Zuvalinyenga (2012) the use of electronic resources can be said to have positively affected lecturers' educational practices and their work in general. In their study they investigated (30) lecturers' use of electronic resources in an effort to uncover correlations between library information literacy training and increased use of web based resources (for example, library journal databases, web search engines, open access journals, and so on), increased use of web resources and improved education as well as increased use of web resources and higher publication rates. Results indicated lecturers attended the e-resources skills training and that they used at least one or more e-resources to find information for use for their teaching and/or research. The majority of the lecturers were motivated to learn how to use electronic resources. The use of e-resources by lecturers proved to have positively affected their work as evidenced by the results.

Likewise, Franklin (2005) reported that the digital information environment has dramatically changed the way that users access information worldwide. Libraries around the world have established a role for themselves in this "digital revolution" by negotiating for and providing networked electronic services that publishers and vendors formerly sold as print materials. These include electronic indexes and abstracts, reference materials, electronic journals, and electronic books, just to name a few.

In another study Franklin, and Terry (2002) reveled that networked electronic services, offered by libraries, have dramatically changed faculty, staff, and student usage patterns at academic libraries in recent years. Libraries' electronic services are available to in-house users when libraries are open, but are also available to authorized remote users outside the library 24 hours a day. At the same time that electronic services are changing library usage patterns, academic libraries are spending an increasing percentage of their collection budgets on electronic services.

Two more examples are provided below for more evidence regarding the use of LinkedIn for assignments (Figures 7.9 and 7.10).

Figure 7.9 Example 2 of Assignment (Writing Essay) Posted by Academic on LinkedIn Page

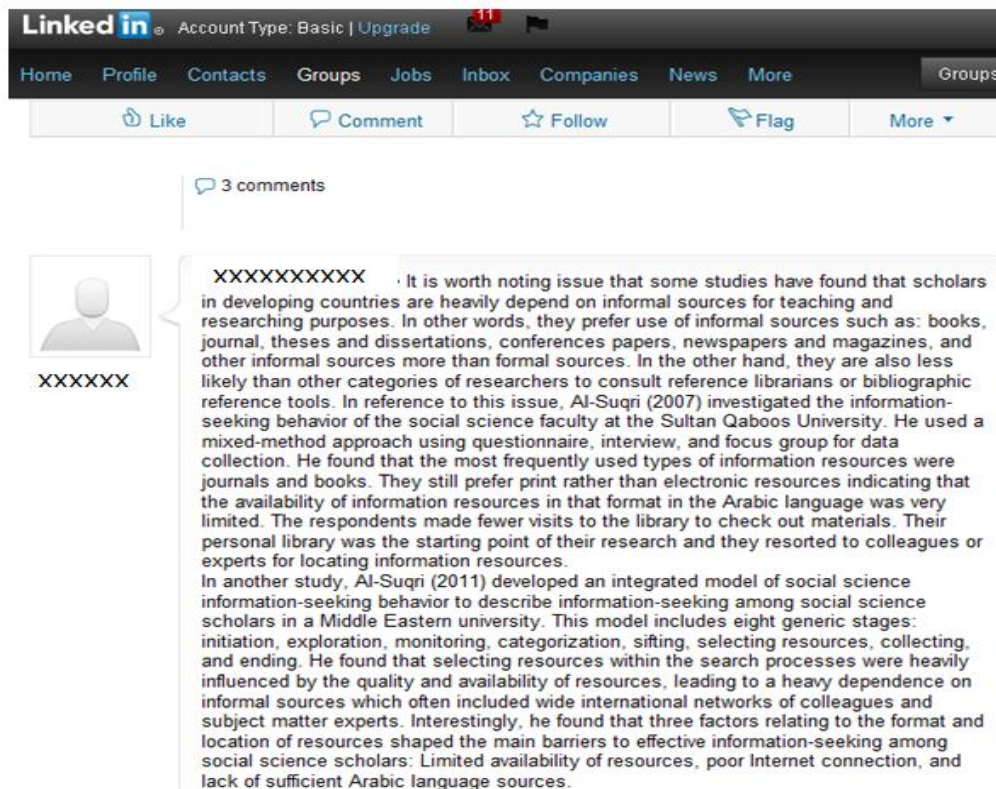
**Discussions** Members Promotions Jobs Search More...

XXXXXXXXXX

**Use of Informal Sources by Scholars**  
 Research has found that scholars in developing countries tend to favor informal methods of obtaining information such as consulting colleagues, browsing and following references or citations (chaining) from other works. They are also less likely than other categories of researchers to consult reference librarians or bibliographic reference tools.

XXXXXXXXXX Please provide more details about this issue?

Figure 7.10 Example 2 of Assignment (Writing Essay) by Student on LinkedIn Page



Regarding the students' participation, the academic reported that:

I found students very motivated to the use of online discussions especially that there are marks for LinkedIn participations. Students can easily post their discussions.

This was supported by the student herself:

I'm enjoying the experience of using LinkedIn in a course within PhD ... I found it an interesting experience that I learn a lot from it and I recommend to use it more within the program's courses and other courses at the University.

#### 7.4.2.5 Difficulties/Challenges in Learning with LinkedIn

The participants, both the academic and the student, were asked the following question: Did you face any difficulties while using the application in this course? In

response, both were happy with the application and did not report any problems. As the academic reported: “the application is very easy and simple. So, no difficulty.”

The only reported problem was by the student:

I faced little difficulties in using LinkedIn in learning purpose but it did not affect my learning benefits. For example, I cannot post figures or tables within the information that I post in my group. Also the participation space is limited and the writing size is very small. In this regard, I recommend adding writing options for posting participations.

#### 7.4.2.6 Willingness to Use LinkedIn in the Future

Both the academic and the student reported that they would continue to use LinkedIn in the future, either for teaching purposes or at the workplace for communication and collaboration purposes. The student reported that:

I have strong intention to continue using LinkedIn at the future workplace because it provides me with many options for different uses. For example, I can use LinkedIn’s blog tool to pull it onto my home page. All I have to do is to list my blog as one of the live links in my profile, and when I choose the blog tool it will bring my blog to the site. Also, it tells me how many people looked at my profile in the last week or few days, and how many times my profile appeared in search.

Similarly, the academic reported that:

It is very useful and it provides facilities to both students and teachers. My intention is to continue using this application in my future courses.

#### ***7.4.3 Summary of the Main Findings***

From the diverse insights given by this case study, it can be noted there is a generally positive attitude towards using LinkedIn in higher education. The major findings of



the case are that both the student and the academic were aware of 'Web 2.0', and the student showed a clear understanding of 'Web 2.0' as a concept. Both the student and the academic classified LinkedIn as a 'Web 2.0' tool.

The academic and the student reported that LinkedIn is an easy to use and useful tool in education, while they reported that they faced no problems within learning and teaching with this online tool. The academic reported that LinkedIn enhanced the teaching style, and the student also reported that LinkedIn changes the learning style.

The use of LinkedIn was limited to resources and information sharing, and using LinkedIn as a platform for course content discussion (posting and asking questions, assignment), which support the interview findings in Chapter 5. Both the academic and the student made positive reports about LinkedIn as a contribution to improving the communication and collaboration activities. These were supported by observed online activities, where both the academic and the student used LinkedIn as a platform for participation and discussion. Both the academic and the student were willing to use LinkedIn in the future.

## Chapter 8 Qualitative and Quantitative Data: Triangulation and Discussion

### 8.1 Introduction

The purpose of triangulating this mixed methods study is to explore in detail the attitude of academics and students towards the use of online tools in higher education. Data from three stages, interviews, the survey and case studies, are triangulated in order to extrapolate overall insights and discussion. The interview findings indicated academics' attitude toward online tools in teaching; questionnaire findings indicated student attitude toward online tools in learning, and the Case Studies explicate a combinations of academic and student views regarding the actual use of online tools in the classroom and beyond. The interplay of these three stages provides a clearer map of these results via a robust comparison to see if similar results are being found, to check and establish validity of mixed data obtained from multiple perspectives and perceptions and in which reflect the current situation of using these tools in the academic community.

This chapter is divided into five main areas. The first section discusses the ambiguity of 'Web 2.0 label. The second topic is about the utilising and adopting of online tools in education and includes the academic community's knowledge of online tools, the utilising of online tools for communication and collaborative learning and within the LIS curriculum, and utilising online tools for scholarly communication and research, and the networked self. The third section discusses 'online tools as open platform for graduates versus LMSs'. The fourth section presents the major gender differences and then interprets and discusses these results within the social context of Oman. The last section discusses the results from the triangulation stage regarding challenges and barriers for adopting online tools. The results of the three stages, is then considered as a basis of comparison with other studies in western and Arabic society and with statistical data from multiple sources, providing a clearer picture of the future adoption and use of online tools use in GCC academic communities.

## 8.2 'Web 2.0' Does Not Function As A Consistent Term

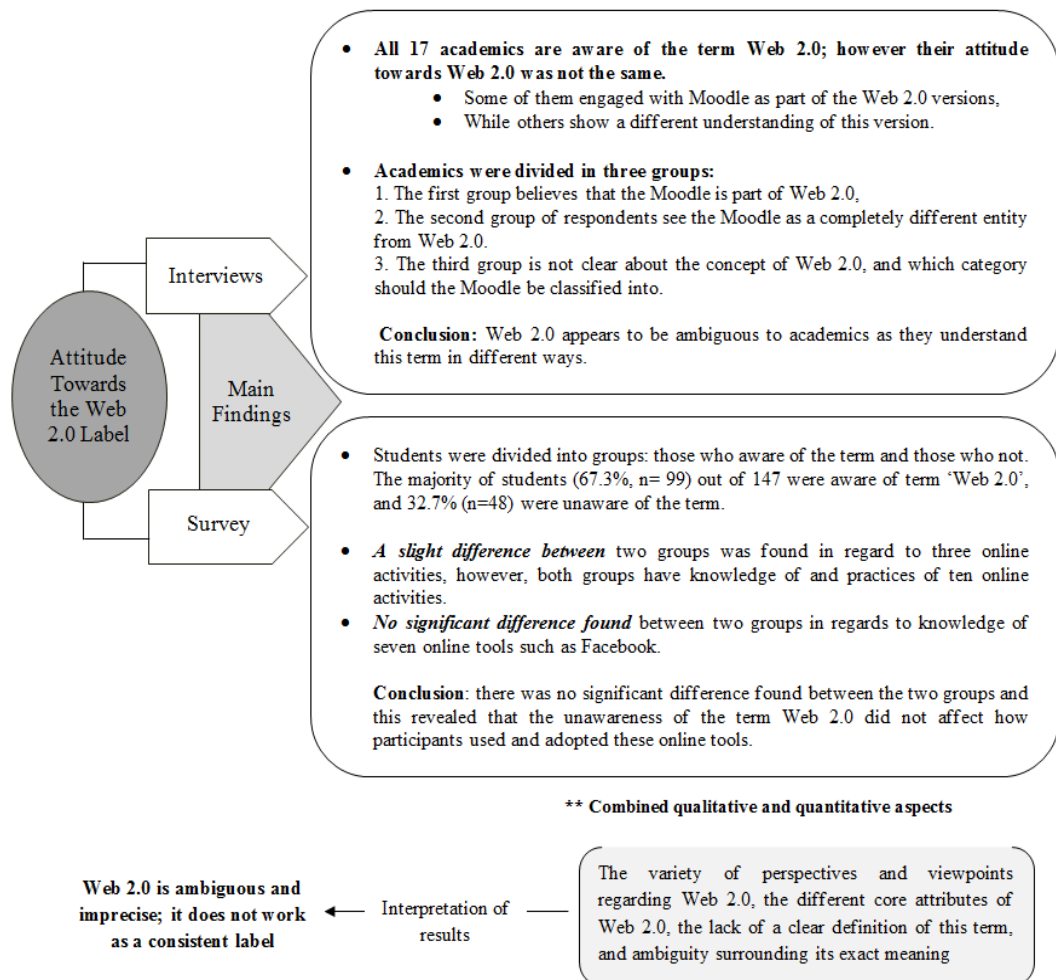
An in depth analysis of the relevant literature showed the ambiguity and imprecision of the term 'Web 2.0' across and inside many disciplines. The lack of an agreed definition of 'Web 2.0' not only impacts on business and marketing, but also affects the academic community. Most researchers and scholars acknowledge multiple definitions of 'Web 2.0'. As pointed out in the introduction chapter to this study, various studies describe 'Web 2.0' differently without exploring the academic community's understanding of the term. Fuchs et al., (2010), for example, stated that "the notions of Social Software and Web 2.0 have thus far been vague; there is no common understanding in existence" (p. 41). As a consequence of the ambiguity of 'Web 2.0' and other terms such as social software, Allen (2012, p. 4), for example, points out, "many internet users have engaged with so-called Web 2.0 applications without realizing they might be part of this new version of the web, while others have continued to use the internet as if this new version had never appeared".

In the meantime, it can be observed that the label 'Web 2.0' has become less searched and thus less important (Figure 3.1). People have lost interest in the label 'Web 2.0' and have moved on to other applications and other terms such as social media. This accords with earlier observations, which showed a constant decline in searches for 'Web 2.0', the peak search volume of this term was between the years 2007 and 2008, and then started to decrease again in 2009. The term social media has increased significantly over the past year (Figure 3.1).

Conducting the current study among IS academics and students at DIS provides evidence on the ambiguity of the 'Web 2.0' in the academic community. In Figure 8.1 data from the interviews and the survey were combined to provide more comprehensive information regarding the ambiguity of the term 'Web 2.0' in the academic community. There are similarities between the attitudes expressed by students in the survey and the academics' attitude towards the label in the interviews. While the results from the interviews reveal three groups of academics with different perspectives and understanding of the label 'Web 2.0' (see Figure 8.1), the survey results indicate that no significant differences were found between those who were aware and those who were unaware of the term 'Web 2.0' in terms of their

knowledge and use of seven online tools such as Facebook and YouTube. Both groups had knowledge about online activities but on different levels, the term ‘Web 2.0’ was not the main concern of respondents (Tables 6.43 B, 6.44 B and 6.45 B).

Figure 8.1 Interview and Survey Results on the Ambiguity of the Term Web 2.0



Comparing the two results (interviews and survey), it can be seen that unawareness of the term does not necessarily affect the academics’ and students’ knowledge and use of online tools. In other words, the interview and survey results are similar with regard to the level of ambiguity of the ‘Web 2.0’ concept. The following main points emerged from the combining of interview and survey results: the variety of perspectives and viewpoints regarding ‘Web 2.0’, the different core attributes of ‘Web 2.0’, the lack of a clear definition of this term, and ambiguity surrounding its exact meaning. Undoubtedly, this provides sufficient evidences of ambiguity of ‘Web 2.0’. The results of interviews and questionnaires, together with the earlier

observations in the literature by Allen (2012), Fuchs et al., (2010) and others, confirms the ambiguity of 'Web 2.0' as a label in the academic community which corroborates the argument of Allen and Fuchs et al.,. Again, these results lead to the conclusion that the term 'Web 2.0' is ambiguous and imprecise in the academic community.

Before proceeding to examine what is causing this ambiguity in the academic community, it is interesting to note that online behaviour and attitudes, or the way people use the web, reflects their understanding of the label 'Web 2.0' and the internet. Although the research literature reveals no previous studies that have examined how people's online activities and behaviour reflects their understanding of the internet and the web, there are many studies that have discussed people's attitudes toward technology and the internet. Davis (2005) argued, 'Web 2.0' is more of an attitude rather than a technology. Berners-Lee (2001) also argued that the web is a personal and DIY (Do-It-Yourself) medium of communication. The three stages of the current study show that when the academic community uses the term, they have built and developed their understanding of 'Web'. When triangulating and comparing the results of the respondents in the interviews who mainly describe 'Web 2.0' according to their knowledge of Moodle and other online tools such as Facebook, with the results of survey and case studies, the combined results show that student and academic understanding of the term 'Web 2.0' correlates with practices and knowledge of other software or other form of e-learning or the internet. This correlation is described in the next section.

The results from the interviews show that using various online tools such as Wikipedia or different technologies such as Moodle reflects a particular understanding of the internet and 'Web 2.0' among the academic community. The academics who classified Moodle as form of 'Web 2.0' described this term as the ability to participate, add content, and share information. This description correlates with their use of Moodle. Other academics described 'Web 2.0' as highly accessible, meaning it can be accessed anytime and is open to the public. This description correlates with their use of Facebook and other online tools that have the same characteristics. Since they have also used LMSs such as Moodle, they can distinguish between different tools. These descriptions of 'Web 2.0' were also highlighted by a

number of authors and scholars (e.g., O'Reilly, 2007; Wirtz et al., 2010; Riegner, 2007; Parise & Guinan, 2008; Andriole, 2010; Constantinides & Fountain, 2008) who referred to 'Web 2.0' as the user's ability to create and update content and to share information or knowledge. The survey results confirm that people's online activities and behaviour reflects their understanding of the internet and the web, while survey results indicate a positive correlation between online tools and descriptions of 'Web 2.0' (see Table 6.47). The results also indicate a significant positive relationship between the descriptions of 'Web 2.0' and five online activities (see Table 6.46). The results from stage three provide further support that academics and students described 'Web 2.0' based on their knowledge and use of online tools. LinkedIn and blogs are classified under 'Web 2.0' applications; 'Web 2.0' is described as a web for interaction and for adding and sharing information. Such attitudes influence their beliefs as well as their behaviour, resulting in a different views and thoughts regarding the term 'Web 2.0'.

In understanding the use of the term, it is useful to map the decline of interest in 'Web 2.0' as a term. As discussed in the literature review in Chapter 3, the ambiguity of the term 'Web 2.0' has multiple origins and uses. The term was launched by an American media company, and not by scholars and researchers in the field of education. Jenkins (2010) argues that "Web 2.0 is not a theory of pedagogy; it's a business model". The term has spread rapidly to different fields of education, to different majors. It has been framed and used according to the needs and nature of these majors. For instance, academic researchers in technology describe it differently from academic researchers in design. Students have knowledge of online tools such as Facebook and YouTube because they deal or interact with particular applications or tools. But 'Web 2.0' is an imprecise label, not a tool. Every tool and/or application distinguishes itself from others by its different characteristics, properties, and unique definition. The label 'Web 2.0' is far less important than other concepts. Social media and social networking concepts are very popular terms used and mentioned by a number of researchers in different fields.

Another important reason for the ambiguity and lack of an agreed upon definition of 'Web 2.0' is that there are similar terms used interchangeably with this label which also ambiguous and unclear, resulting in a different understanding of 'Web 2.0'

based on online practices as explained earlier. In reviewing the literature, Fuchs et al. (2010) stated that 'Web 2.0' and social software are two terms often used interchangeably; Bartlett-Bragg (2006) and boyd and Ellison (2007) classified social software as a major component under 'Web 2.0'; and Blinn et al. (2009, p. 3) claimed that "social software is not a synonym to Web 2.0 but a subsection of Web 2.0". "The phrases provided for definition of Web 2.0 are too close in terminology for one to differentiate between them" (Davis, 2009, p. 59). Responses to the questionnaire reported in Table 6.9, out of 147 students, 31% (n=30) reported that "social software" is a highly appropriate description of 'Web 2.0' (A scale of 1 to 5 was used to explore their perception toward these descriptive words as (1) being extremely descriptive words, (Table 6.7), and 31% (n=30) reported that "social networks" is a highly appropriate descriptions of 'Web 2.0'. They used these terms interchangeably with the term 'Web 2.0'. The survey results confirm that these two terms are highly appropriate description of 'Web 2.0'. These results are consistent with previous studies (e.g., Harrison & Barthel, 2009; Lai & Turban, 2008; Mangold & Faulds, 2009) which suggested that social software and social networks can be used as description words of 'Web 2.0' In particular, social network is an extremely popular term used to define 'Web 2.0' (e.g., Constantinides & Fountain, 2008; Wirtz et al., 2010).

Another significant reason for losing interest in 'Web 2.0', the unprecedented growth of social media and people use of SNSs such as Facebook and online video sites such as YouTube affects the understanding and dissemination of the term 'Web 2.0'. The new generation hears about these social media tools from different sources such as television, the internet, newspapers, and friends, and even from the tools themselves. This has raised the popularity of social media across the world. This finding is further supported by the results of (Google Search Trends) as discussed earlier. People might be unaware of 'Web 2.0' and more aware of online tools or social media, or they might have no clear definition about what constitutes 'Web 2.0'. They tend to describe and look at 'Web 2.0' from a social aspect, meaning they describe this term according to their social activities on the web. In other words, the dissemination of the label 'Web 2.0' was largely limited to the field of research, whereas labels such as social media and Facebook were disseminated to the public because they became one of the main news sources for people.

With respect to the social context of Oman, the Arab Spring has also contributed to changing people's views of social and new media and has increased their knowledge of these tools. Increased awareness of social media among people corroborates earlier analysis of Google Trends of the term which shows that "social media" in Oman jumped significantly in 2012, likely due to the Arab revolutions. Social Media tools have become the main sources of news regarding the Arab world as shown by ASMR (2011) which reported that the most news on the events during the civil movements in Egypt and Tunisia came from social media sources. Social media and Facebook were becoming one of the main news sources for people in Oman, the GCC, and Arab world.

As a consequence of the rising popularity of social media and other terms, ongoing ambiguity, and declining interest in the label, it appears that 'Web 2.0' does not work as a consistent label. Academics and students can create an account and use online tools such as Facebook and YouTube for different purposes. Facebook can be an online collaborative tool or just an online tool, depending on how it used. As argued in section 3.2.2 of Chapter 3, the idea of web categorisation may no longer be appropriate or useful. Rather, it would be more useful to focus on what people actually do online. Due to the ambiguity of 'Web 2.0', this study encourages researchers to focus more on people's online activities rather than raise more arguments regarding web categorisation. Moving from overrating the importance of 'Web 2.0' to exploring other important terms; focusing on specific tools, such as Twitter or Facebook, to avoid some of this ambiguity; and what internet users actually do online will be more useful and effective in understanding the new social world.

### **8.3 Academic Community's Attitude Towards Online Tools in Education**

#### ***8.3.1 Academic Community's Knowledge of Online Tools***

In reviewing the literature on the level of awareness of online tools in academic communities, the level of use or knowledge of these tools varies from one society to another, and the level of use of these online tools is even different from one application or tool to another. There is also a difference between students and academics regarding levels of using and adopting these online tools, and even



between academics themselves based on their attitudes and culture. For example, Ajjan and Hartshorne (2008); and Roblyer et al. (2010) found that students are increasing their use of emerging technologies and tools, they seem much more open to the idea of using these tools rather than academics. An and Williams (2010) also added that many academics still have little or no experience with online tools as they described as 'Web 2.0 applications'. Other studies showed that some academic communities are relatively aware of or familiar with these online tools (e.g., Sandars and Schroter, 2007; Sandars et al., 2008). It is also worth noting that, findings reported from previous research from 2007 to 2011 indicated that SNSs are mostly used by the academic community (e.g., Kennedy et al., 2007; Ellison et al., 2006; Sandars et al., 2008; Roblyer et al., 2010; Wise et al. 2011). This also accords with the statistical data presented in Chapter 2, which showed that the use of SNSs has increased consistently in most parts of the world.

In reviewing the Arabic literature on the use of online tools in learning and teaching practice, particularly in Oman, few studies provide statistical data in the use of these tools as well as the level of awareness of online tools in general. In the GCC, the recent statistical data presented in Chapter 2, as stated by Internet World Stats (2012), indicates that the use of SNSs has increased consistently in the GCC. As such, the recent statistical data by ITU (2012) also showed that most visited sites by people in the Arab countries are Facebook, YouTube, Google and similar online blogs and forums, whether local or global. As mentioned in the literature review regarding the level of awareness of online tools in the GCC, Al-Jenaibi (2011) found the majority of the respondents in the UAE used Facebook, followed by LinkedIn and MySpace; Twitter was used by many of respondents as micro-blogging site compared with other micro-blogging sites, YouTube was reported to be as a primary site for sharing videos. Al kindi and Alhashmi (2012) also found that Google Groups, Facebook and Yahoo! 360 are the most popular SNSs used by students at Shinas College of Technology in Oman. Al kindi and Al-Suqri (2013) also found that Facebook, Google groups and Twitter were the most popular SNSs used among academics at the college of Art and Social Sciences at SQU in Oman.

Turning to the results of the current study, main findings from the interviews and survey show that both academics and students are aware of SNSs. Nearly all (94.1%,

n=16 out of 17) the academics had an account with one or more SNSs; the corresponding proportion for students was 65.5%, and about half of the students had a Facebook account. This is consistent with the literature from 2007 to 2011 as indicated above, which reports that SNSs are mostly used by the academic communities. This also accords with previous studies and with statistical data presented in previous section, which also reports that the use of SNSs has increased consistently in most parts of the world as well as in the GCC. These results also supported Al kindi and Alhashmi (2012); Al kindi & Al-Suqri (2013) and Al-Jenaibi's (2011) studies in terms of the popularity of Facebook and YouTube, but contradicted Al-Jenaibi's results regarding the popularity of Twitter and LinkedIn. Omani students in the current study reported using Twitter and LinkedIn less frequently than other online tools, which indicates that the use of these tools differs across the GCC states. What follows is a description of the key factors that contributed to high awareness levels of these tools in Oman.

The observed increase in the level of knowledge and use of these tools in Oman could be attributed to three important factors. Firstly, a comparison of interviews and survey results reveals that the increasing use of online tools such as Facebook and YouTube among Omani correlates with the availability of communication and smart devices such as smartphones. There are some responses from the interviews indicating that the emergence of new communication devices such as smartphones encourage students to use online tools. This also correlates with survey results, explicated in several tables: Table 6.5 indicated that the majority of students used a mobile internet connection to access the internet; Table 6.4 showed that the great majority of students (87%) use smartphones to access the internet, and 40.1% of the total students (n=59 out of 147) of them access the internet "very often"; Table 6.4 (results of the Spearman test) showed a positive relationship between smartphone use and the use of Facebook and YouTube. When comparing the results of the respondents in these tables with findings by Callanan & Dries-Ziekenheiner (2012) as presented in Chapter 2, it can be seen that there are similarities between these results. While Callanan & Dries-Ziekenheiner (2012), reported that 91% of internet users in Oman used a mobile internet connection, and almost 92% of internet users in Oman owned a smartphone, with many using the latest smartphone handsets. Taken together, this data suggests that smartphones facilitate the use of these applications

and tools. The increasing use of smartphones in the country allows people to download freely applications such as Facebook and Twitter. This is also one of the characteristics of these tools, adapting to smartphones which will be discussed in section 8.4. All these indications point to the importance of smartphones in increasing the use of these applications in Oman.

The second factor of increasing the level of knowledge and use of these tools in Oman is the resulting reorganisation of society, changes in social culture, and the openness of the new generation in Oman to Western societies which have contributed to the changes in Omanis' attitudes towards the internet. As Abdulla (2010) and Jamal and Melkote (2008) stated, the advent and impact of the internet and new media technologies in the Arab region has affected people's activities and participation on the web. The Arab Spring has also contributed to this change by motivating people to use social media to follow the news and communicate with others, which has also helped lead to social transformation in Oman. The trends and interests of the new generation are different from the old generation; the former are much more open to using various online tools such as Facebook. Some responses from the interviews indicate that the existence of these tools contributes to these changes in social culture:

...it can be noticed throughout society, a few males communicate with females face to face, while the existence of these technologies has lessened embarrassment and made this type of communication more effective. So, it provides an opportunity to communicate and express opinions more freely.

The third factor of increasing the level of knowledge and use of these tools is related to the characteristics of these tools. Students and academics use these tools because most of them are easily accessible and flexible in use, as shown in the combined results of the interviews, survey, and case studies. The characteristic features offered by the tools motivate and encourage people to use them. Section 8.4 will delve more deeply into a discussion of these characteristics as open platforms for students.

On the other hand, as mentioned in the literature review, blogging is declining as a means of communication. For example, the study of Barnes and Lescault (2012)

found that the use of blogging started to decline in 2007 among the Inc. 500 (a monthly publication focused on growing companies in the US). The use of blogging dropped to 37% in 2011. In addition, results of the Pew Internet and American Life Project, which examines social media use among teens and young adults, show that teen blogging is on the decline (Lenhart et al., 2010). Lenhart et al. (2010) also indicated that, since 2005, roughly one in ten online adults have maintained a personal online journal or blog. In contrast to the older generation, the teen generation might be more interested in newer tools at the expense of blogs. Churchill (2009) found that students were blogging because of assessment and course requirements, and because the facilitator was blogging as well. The study concluded that students were less willing to continue using this tool in their future learning.

It is relevant to note the declining use of blogs among students in the current study. The survey results in table 6.10 show that 40.1% (n=57 out of 147) of the students have maintained blogs before but no longer do so; only 6% (n=9 out of 147) continue to blog as a major part of their internet use. This also accords with interview results which show that only 5 (out of 17) of the academics have a blog account or have created a blog. Meanwhile, the results of Case Study One (Stage 3) provide important reasons for the decline of blogging among students. The first reason is that the students blog due to assessment requirements. For example, one student reported the following:

I would like to talk about my self-evaluation regarding the use of blogs in this course. I got benefits from blogging, however, this benefit was limited to the course and we stopped doing this (blogging) after the course ended. (S 4)

The second reason is that some students switch to other applications after course completion. One student said the following:

Personally, I will not use blogs in the future because there are many other options and suitable alternatives that can be used more effectively than blogs, such as Facebook and Twitter...These technologies are more popular in our society and there are many groups that prefer to use social networks because of

their ease of use and effectiveness. I found Facebook and Twitter to be more effective than blogs. (S 8)

Similarly, another student reported the following:

... if I find another alternative tool instead of a blog, of course, I will use the new tool. I am sure that new technologies will emerge in the future and will replace the old ones, with advantages and elements more splendid and easier to use. (S 2)

The popularity of blogging seems to be declining among students. The changing trends in SNSs use among students have led to a decline in using blogs and similar tools. Many students are blogging because of assessment requirements and tasks requiring the use of blogs in their courses, which supports the findings of Churchill (2009). However, some academics in the current study still use blogs. It should be noted, however, that the male students in the current study were likely to abandon blogs. This will be discussed further in section 8.5.

It is also worth noting that other online tools such as podcasts and social bookmarking recorded low levels of use by the academic communities. For example, while very few studies recorded that social bookmarking was highly used among faculty (e.g., Tyagi, 2012), most findings of previous research showed that these tools are less popular among academic community (Majhi & Maharana, 2011; Kennedy et al., 2007; and Sandars & Schroter, 2007). As such, with respect to the social context of Oman, the statistical data presented in Chapter 2, Table 2.9, indicated that these online tools are not popular among people in Oman.

Podcasts, social bookmarking, LinkedIn and Academia.edu recorded low levels of use by the academic community in the current study (see Tables 5.2 and 6.10). However, 33.8% (n=48 out of 147) of the students had never heard about RSS; 38.0% (n=54 out of 147) knew about it but did not use it. On the other hand, the majority of academics had heard about RSS and seven of them subscribed to RSS feeds. This shows that the academics are aware of this tool; it can be used for podcasting, journals, databases, updated news articles, and blogs or for receiving or

tracking news updates or information within a library or a website. This might also indicate that the functionality of RSS is less visible to younger users, since it is still being used, but not needing to be acknowledged. Regarding, professional SNSs such as LinkedIn and Academia.edu, about half of the 147 students had never heard of the online tools LinkedIn and Academia.edu. Few academics use Professional SNSs either for education or for scholarly communication and collaboration, which will be discussed in section 8.3.4. It is possible that students had not heard of or did not use these tools because the audiences of Professional SNSs are professionals or researchers from different fields. These tools have different users and design purposes from Facebook and other SNSs. These results also indicate that the academics' knowledge and use of these tools is slowly increasing.

### ***8.3.2 Teaching Practice and Collaborative Learning within Online Tools***

Using various online tools effectively can create a collaborative learning environment and enhance cooperation and communication between learners and their instructors. The findings of previous studies, for example, Malhiwsky (2010), Peterson (2009) and Li and Pitts (2009), found that these tools support student learning overall, as well as collaborative e-learning, in particular. Despite this, as deeply investigated in the literature, people report overall high awareness of a range of online tools, but less actual use regarding teaching and learning. For example, Ajjan and Hartshorne (2008) found that these tools as they characterised as 'Web 2.0' could improve student learning, although few of the faculty use this tool in the classroom.

As mentioned in the Arabic literature, little research has been done on the topic of the usage and adoption of online tools in teaching and learning contexts in the GCC. Conducting this study provided a clearer picture of the use of these tools in the academic community in Oman. The results of the current study show that most academics agreed that these tools and applications help them to communicate and collaborate effectively with others. The results also demonstrate that most LIS academics believe that integrating tools such as blogs and LinkedIn into the learning environment can improve student learning and their understanding of course content. Several academics considered the use of these applications to be an integral part of

the process of teaching an LIS curriculum. The findings of the case studies are consistent with the findings of the interviews. Academics and students reported positively regarding the contributions of blogs and LinkedIn in improving communication and collaborative activities among students. The majority of academics are aware of some of these tools and applications, but that they are less apt to put them to actual use and adapt them to their teaching practices. In other words, the findings of the current study suggest that, in general, the academic community has a high regard for the use of various online tools in education, however few of them choose to use these tools in their teaching practice.

Proceeding to examine the factors influencing this result, extrapolated from the combined data, there are three explanations as to why few of the academics choose to use these tools in their teaching practice. One explanation correlates with heavy workloads, combined with a lack of internet services, tends to make academics quite slow in adopting these tools in their teaching. (This will be discussed further in section 8.6). Another explanation for some academics' reluctance to use online tools and applications in the classroom is that some of these tools are less controlled of content due to a lack of ownership (del Val et al., 2010, Wise et al., 2011). They are not under the direct control of the university. For example, one academic argued that:

Facebook is a general *newspaper* for all; there is no limit on visits, no limit on time spent on the site, it is free of charge, there is no censorship and the door is open for all!!

The third factor behind this reticence to use online tools is that, most academics have already used Moodle in their teaching which also correlates to the second factor (Moodle is under the direct control of the university). Some of those academics report that there is no need to use other applications, since various tasks and activities can be performed by using Moodle. More specifically, using other forms of e-learning such as LMS, Moodle may impede use of various online tools. It is important to note here that some of those academics classify Moodle under the umbrella of online tools as they categorised as 'Web 2.0'. This indicates a correlation between use of these tools and the use of other forms of e-learning. Some comments regarding the use of Moodle as academics reported in the interviews:

I think there are a lot of social networks, and I can't see any need for them in an academic environment. We have Moodle and allow communication, so there is no difference between them.

I prefer using Moodle for teaching because it is designed specifically for education, while Web technologies or so-called Web 2.0 applications are designed specifically for social networking ... and everything related to social life.

What I care about is that features of Web 2.0 can be found in Moodle, and wikis and blogs are also available in the new version of Moodle.

It is also worth examining the use of a particular online tool such as Facebook and YouTube in education. In reviewing the literature, many studies found that YouTube supports student learning (e.g., Mullen & Wedwick, 2008; McLoughlin & Lee, 2007; Burke et al., 2009). As such, according to previous studies by Bosch (2009) and Kosik (2007), students use Facebook for various academic purposes, mainly for finding information and for contacting their peers regarding assignments and course materials. In general, many studies showed that people use online tools such as Facebook as communications tools (Miller, 2005; Maness, 2006; Virkus & Bamigbola, 2011). However, Madge et al., (2009) found in their study that the majority of the surveyed university students used Facebook for social reasons. As such, Garoufallou and Charitopoulou (2011) found that most of the students think that the networks' main function is to entertain them, but not for educational purposes.

Comparing the literature with the findings of respondents in the current study, the students reported positivity regarding using these tools (especially YouTube) within LIS courses which support their understanding of the LIS field. This finding reflects students' feedback to the use of YouTube within LIS courses while interview results indicated that YouTube is used in teaching. The results also showed that half of the students use Facebook to communicate and collaborate with others, with the level of use noted as "occasionally", "sometimes", "often", or "very often", for learning and personal related activities. However, it is worth noting that there is evidence to



suggest that some students use tools such as Facebook and discussion forums to communicate and collaborate with others for personal or social purposes rather than for learning (*there is a slight difference between personal and learning uses of Facebook*), while they prefer to use emails for learning purposes. This finding suggests that in general those students may not want to mix their education with their social environments or social activities. Email services such as Hotmail and Gmail are used more frequently in formal communications, such as contacting a college or classmate, and students may be more confident in using emails for safety and privacy. For example, SNSs are not a wise or appropriate way to send formal letters online. A network's messaging platform provides immediate responses and can reach more people. This correlates with reasons behind students using these tools such as Facebook for the purpose of communication.

Another explanation for this slight difference between personal and learning online activities is that those who use these tools for personal purposes are more likely to also use them for learning purposes. This accords with survey results which showed a positive correlation between a student's use of online tools in learning and his or her use of online tools for personal activities. Potentially, this implies that students use the internet significantly for their personal use and for their studies in the same way, but that this use differs for each application: Web-based email service is used more frequently for educational or formal purposes, and SNSs, such as Facebook and similar online services, are used more frequently for personal uses, such as social, or informal, interaction.

It should be noted that emailing and searching are commonly used by people on the internet and they recorded the most popular online activities as reported by Purcell (2011). The results from the survey demonstrate that the most common personal and learning activities on the Web are to browse or to search for information via a search engine and to send or receive emails via services such as Hotmail and Gmail (see Tables 6.12 and 6.13). Results from the interview also indicated that the use of the internet includes emailing and searching. These two activities still top the list of the most popular online activities, either for personal or learning purposes. Even with the development of the Web and the internet, the rise of social media or social networks and the availability of smart devices, such as smartphone, which affect and reshape

the way Omani students use the internet, searches and email consistently ranked as the most frequent uses among them. This also correlates with statistical data presented in Chapter 2, which showed that Google search engine, which is used to search and find information for both personal and learning purposes, was recorded as the most visited site by people in Oman.

As pointed out in the literature review using these tools within the LIS curriculum will be of relevance to LIS students, as many libraries now start to use these tools within library services as cited in the literature (e.g., Linh, 2008; Charnigo & Barnett-Ellis, 2007; Xu et al., 2009; Srivastava, 2009; Han and Liu, 2009). Many LISDs have responded to the impact of online tools by introducing these tools to students in their classes (Bawden et al., 2007; Luo, 2009; Braender, Kapp & Years, 2009). LIS has become more technically demanding (Kules & McDaniel, 2010), and students need to be aware of the latest technologies to support them in their future careers.

In the current study the survey recorded a positive attitude by the majority of students regarding the role of these tools in preparing themselves for the future job market, improving their collaboration and communication with others, and making them competitive in seeking employment (see Tables 6.17 and 6.18). This correlates with the results from interviews which illustrate that one key motivation, or factor, in using these tools within the curriculum or in teaching is remaining competitive to meet the needs of the job market. This also accords with other results from interviews which indicated that the majority of academics, and even those who do not use online tools, stated that these tools would offer new skills to students and would give them the opportunity to compete with other students in different disciplines. Other results from the survey also indicated that student attitudes are more likely to be shaped by their views of potential applications for the future. For example, those who see various online tools as being important for the future workplace are more likely to use them within LIS courses. Such attitudes and use correlates with student acceptance of these technologies; those who tend to accept these tools are also willing to use them in the future. This is crucial to the success of these tools within the context of university education. These findings suggest that in general, academics seem to be aware of student need for technologies and internet

applications, and this awareness encourages some of them to adopt new ideas regarding various online tools, resulting in changes within key aspects of the old LIS curricula.

As discussed in Chapter 3, the trends of libraries to adopt and use online tools require graduates with not only knowledge in the field, but also with skills in using these types of technologies in innovative and more effective ways. Adopting and using various online tools within LIS curricula will support LIS students in learning and help them to be competitive, and find their own place, in the digital world. In the contemporary Oman job market, two main skills are needed for LIS students to compete with others who are adept in educational technology, computer science and other fields- English proficiency and ICT skills, including internet innovations. As noted in Chapter 2, SQU and DIS have consciously started to improve students' skills in IT and English. Using these tools within courses teaches students how to shape them to accomplish different purposes in their learning environment, as well as in their future careers which will be useful for them. This is supported by feedback from institutions regarding student-learning outcomes from these online tools in the workplace as one academic mentioned "*Many institutes and research centres that train our students are satisfied with the students' knowledge of these applications*". A further study with more focus on workplace needs and requirements is therefore suggested.

### ***8.3.3 Online Tools within the LIS Curriculum***

Moving toward the use and adopting of these tools and technologies within the courses in particular ways helps to produce a clear picture of optimal use rather than just describing the technologies and supposing their uses. One purpose of this study was to explore the actual use of these tools and technologies within LIS courses. Findings from previous studies showed different educational activities by using various online tools. Three different levels of activities were widely practiced. These include resources and information sharing, posting and uploading assignments, and discussion forum or boards. Leaver (2012) for example, who adopted Twitter in student learning, found three main uses for this service. These were socialising, resource sharing (e.g., highlighting links to current resources, news items, blog posts

or other material relevant to the course) and posing questions for participants (students and instructors- tutors or unit coordinators). Some similar findings were reported in different studies (e.g., Sendall, Geccucci & Peslak, 2008; Downes, 2004; Ioannou & Artino's, 2008).

Conducting the current study among IS academics and students at DIS, using three stages within a combination of qualitative and quantitative data, provided a clearer picture of actual use of these tools while no previous studies have investigated this issue in detail. The outcomes of the interviews indicate three main activities within the academic community with regard to the use of online tools within LIS courses: (1) resources and information sharing, including sharing ideas, questions, articles, and links and finding information; (2) posting assignments for students; (3) using these tools as platforms for discussion, such as asking questions and discussing course content. These results are supported by the Case Study Two which illustrated that LinkedIn is used for resources, information sharing and as a platform for course content discussion (posting and asking questions) and posting assignments. (This finding is the most obvious to emerge from the case studies.) These results are consistent with the literature review as reported in the previous paragraph.

The results of the literature review, together with current study results, indicated that these tools are more often used as discussion forums and for resources and information sharing, but not for posting quizzes, which can be achieved through LMSs. One explanation for the limitations of using these tools may be that academics and students are less confident in using them for short quizzes, which also require assessment and control. It also correlates with ownership and content control as indicated in the previous section. They preference is for hard-copy tests rather than online tests or exams. This correlates with results from the survey regarding LMSs which showed that half the students explained their experience in "doing online quizzes" as either "poor" or "very poor". This suggests that some academics and students do not do online quizzes, a finding which also reflects their experience with the use of online tools. Another reason for this aversion to online quizzes may be slow uploads or downloads of exams on the internet which also related to the lack of internet services as indicated previously. This problem is the same one associated with the use of Moodle. One academic reported:

I have not used Moodle in designing the examinations because of the bugs, the sluggishness of the internet, and because there are an insufficient number of computer labs.

Therefore, academics prefer to limit their use to the above-mentioned activities, which can be managed and controlled. This study's findings also show that these tools are simply a new means of communication and collaboration, similar to email and searches. Using these tools is just a different way of doing these activities. These activities also were performed by using Moodle. Their effectiveness, however, depends on how academics use and operate them in their teaching practice. They can be used to accomplish different tasks within the courses, but not frequently for online quizzes, which require control regarding technical infrastructure and a centralised and static location as pointed out by del Val et al. (2010). Based on previous findings, it can thus be suggested that a combination of different technologies need to be adopted in teaching courses.

It is also worth noting that the form and design of online tools is one of the key factors in deciding whether or not to use them in teaching. In the reviewing of the literature, there were no studies encountered that have investigated this issue in detail. The results from the interviews also reflect the attitudes of two groups of academics regarding Moodle and online tools in terms of their forms which correlates with the academics' intention to use them in the future. All three sources combined to provide a clearer picture of academic intention to use online tools. This intention correlates with the type of application and its characteristics which will be discussed in section 8.4. It also correlates with privacy and safety concerns. Results from interviews indicated that some academics prefer to use Facebook, whereas others prefer to use blogs and YouTube. Some of them prefer to use Moodle, whereas others prefer to use both various online tools and Moodle. Some academics reported that the form of some applications is appropriate to use in the education sector, while others are not. This also indicates that various online tools serve different purposes in the classroom, depending on the way academics use and direct the content and the form of the tool. Most of these technologies can contribute to student learning. This is supported by the case studies which indicated that blogs and LinkedIn are used in teaching but in different ways.

In general, there is an intention amongst most academics to adopt and use new online tools in their teaching practice. Academics recognise the role of these tools and applications to support LIS curricula. This recognition explains their intention to use these tools in the future, as they struggle to survive in the digital academic environment (as they reported in the interviews). The introduction of various online tools in the LIS curriculum and the issues of determining which of these are useful in the classroom is becoming necessary. While the study reveals a positive student attitude towards the use these tools, they expect the use of more technologies in their courses. Various online tools open up a range of new possibilities for teaching LIS courses, while LISDs are becoming more technical and continue to incorporate information technology into their curriculum in order to survive in the digital age.

#### ***8.3.4 Online Tools for Scholarly Communication and Research, and the Networked Self***

The growth of new online tools and related technologies has great potential for altering the ways in which researchers and scholars communicate and collaborate with regard to research. Tötteraman and Widen-Wulff (2009) found that online tools as they characterised as ‘Web 2.0’ encourage new methods of scholarly communication and collaboration. This can be observed in Barbour and Marshall’s (2012) study which outlined five types of academic persona or online identities. One type is ‘the public self or networked self’ which is more about sharing ideas and networking such as discussion of academic concern and engaging with other researchers. They stated that this type appears to be more common in the Humanities area.

In reviewing the literature, several studies were located that discussed the use of social media and various online tools in scholarly communication and collaborative research. These studies found that the use of these tools promotes collaboration and facilitates the aggregation, organisation and management of knowledge (Virkus, 2008) to help in demonstrating the diversity of individual research interests (Virkus, as cited in Shafique et al., 2010). It assists in keeping up-to-date on related topics of interest, the online submission of papers, personalised web services, self-publishing on the Web and professional communication with others (Tyagi, 2012). Alexander

(as cited in Sykes et al., 2008) reported that social bookmarking is used for professional purposes, particularly in research. The following is the main findings of the current study regarding using online tools in scholarly and research.

The current study found that few LIS academics used online tools to perform these activities, and most of them used online tools basically to communicate with professionals and researchers. The most common activities while using these online tools for professional reasons and collaborative research are communicating with colleagues, following the latest news, reading conference news and working papers, seeking knowledge and advice from others and contacting researchers, which consider ‘the public self or networked self’ type of academic persona as reported by Barbour and Marshall (2012). Few academics use professional SNSs, such as LinkedIn and Academia.edu for the purposes of scholarly communication and collaborative research. The most used online tools, as reported by academics, are Facebook, blogs, LinkedIn and Academia.edu. However, none of the academics mentioned using social bookmarking for research or for scholarly communication and collaboration. This application is much lower than the others, so it could be an effect of very few people using them.

There are two explanations for less use of these tools by academics for professional purposes (and scholarly and research). Firstly, most academics prefer using emails for the purpose of research. This also correlates with survey results in the previous section which show that email services such as Hotmail and Gmail are used more frequently in formal communications by students rather than Facebook. For as an academic reported that:

I have, in fact, two accounts on Facebook, but I do not use them. Regarding the scientific research, I usually communicate through e-mails with other researchers and colleagues.

Secondly, some academics are unable to put their trust in these tools with regard to the assurances of quality that are required for the purposes of scholarly communication and research. For example, one academic argued that “we cannot cater for scientific subjects and research through Facebook”. This finding seem to be

consistent with Procter et al. (2010) research which found that “many researchers are discouraged from making use of new forms of scholarly communications because they are unable to put their trust in resources that have not been subject to traditional peer review” (p. 4051)

It is also worth noting that students do not consider SNSs important to their studies and their professional lives. The findings of the current study support this result (see Tables 6.12 and 6.13), with the majority of students (nearly 70%) having never used Academia.edu or/and LinkedIn for collaboration (e.g., following the latest research in a field, updating, communicating with other professionals in a field). It can be concluded that the harnessing of online tools for purposes of research, and the possible advantages that these tools could offer in terms of professional networking and research, are not accessed by students. A possible explanation for some of these results correlates with lack of awareness of the importance of these tools in research. These two applications are much lower in use than the others, as mentioned previously. They are not popular among students.

#### **8.4 Online Tools as Open Platforms Versus Traditional LMSs**

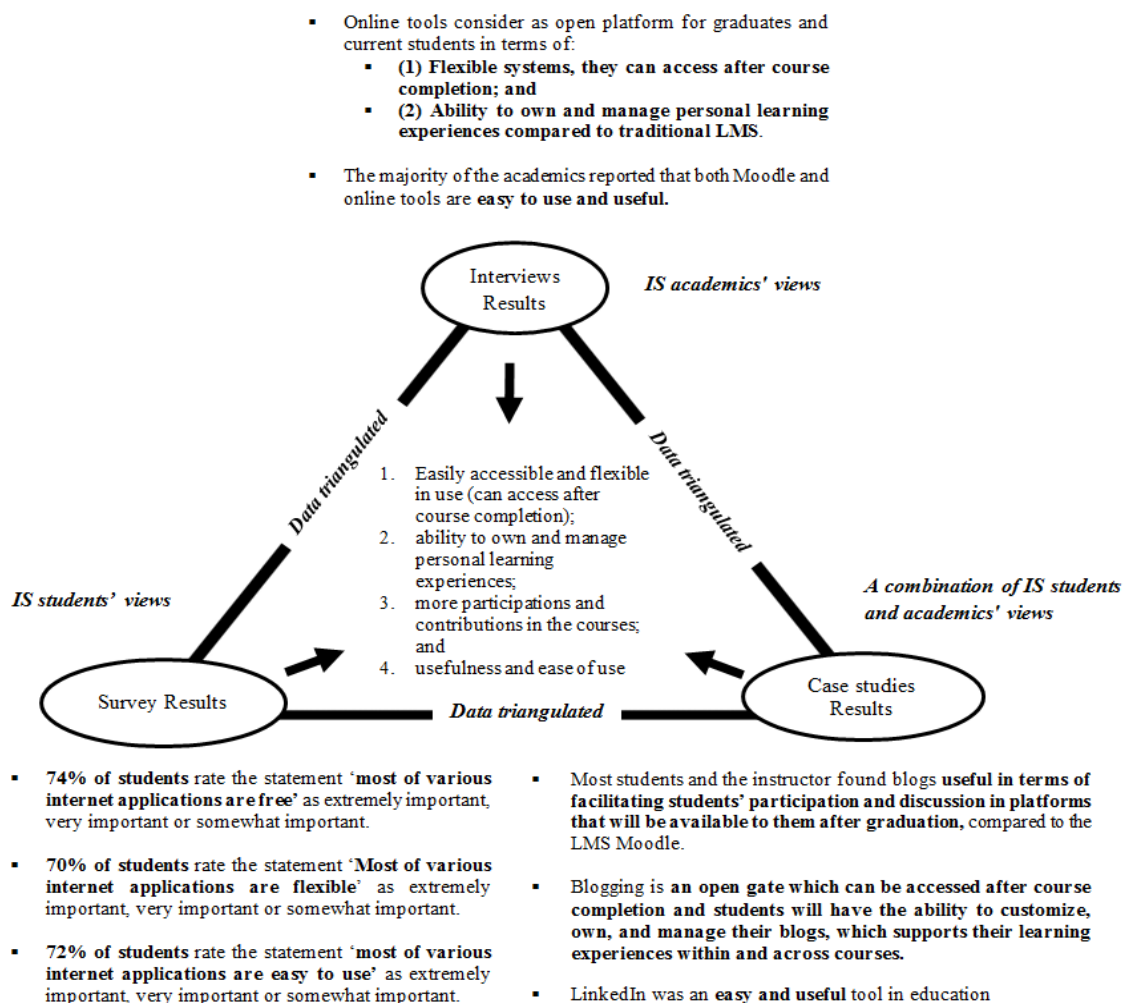
As argued in Chapter 3, an open platform, one of the vital characteristic of these tools, can facilitate an online learning environment and allow people to interact, communicate and collaborate with each other. These characteristics and features cannot be found in or provided by traditional LMSs. Some of these characteristics, for example, ease of use including accessibility and security, features offered by the tool and availability of support resources for the tool, are also considered as critical criteria when adopting an online tool in education (Clark as cited in Hodges and Repman, 2011). The following three studies, taken together, reveal the importance of online tools as supportive learning environment. Mott (2010) claimed that individuals can benefit from PLE because of the characteristics and features such as the ability to access at any time, flexible systems, variety and functionality of tools, and the ability to own and manage personal learning experiences. Downes (2007) also argued that LMSs will be insufficient for the all the needs of students and academics, while Soumplis et al. (2011) pointed out that the incorporation of various online tools within those LMSs, differentiates with regard to their ability and



potential to be used as PLEs. What follows is an outline of main characteristics of these tools as reported by the academic community in the current study.

Figure 8.2 illustrates data triangulated from the three stages: interviews, questionnaires and the case studies regarding the characteristics of online tools versus LMSs.

Figure 8.2 Finding Triangulation “Online Tools versus Traditional LMS”



The results of the three stages are linked with each other. The results from interviews demonstrate that most academics found that these tools offered flexible systems, accessibility after course completion, and the ability for students to manage personal learning experiences. This also accords with survey results which show that these applications are free and flexible in use, allowing more control over content and learning and featuring additional options. Stage three confirms that these tools are

flexible systems, accessible after course completion and allow students to manage their personal learning experiences through the ability to add content, customise profile pages and own workspaces. Analysed and triangulated data from these stages suggest that online tools can be harnessed in e-learning technologies or LMS in teaching institutions. The findings of current study in Figure 8.2 corroborate the ideas of Mott (2010). Therefore, it is significant to note that academics consider these characteristics when adopting online tools tool for instructional purposes. Their motivations for using these tools also correlate with the characteristics of these tools. These characteristics make PLE far superior to the LMSs, and give the academic community greater potential to create an effective teaching and learning environment. These findings corroborate the ideas of the important role of these tools in supporting student learning (formally or informally) if they are used appropriately and effectively.

There is evidence that these tools and applications are used as a platform for students after graduation, not only inside the classroom and university. The result of the interviews supports the view that these tools are used as a platform for communication with graduates regarding different issues. For example, one academic stated that *“I communicate with graduates through Facebook in order to answer their questions”*, another reported that *“in my experience, lots of students thank us for using these applications in teaching and have started to apply them in their work. They also have continuous contact with colleagues in other forums”*. This supported the argument that one of the vital characteristic of these tools is an open platform which allows exchanging knowledge and experience between the learners. LMSs are limited by geographical boundaries, and offer limited informal learning support.

Turning back to online tools characteristics, it is also worth noting that academics' selection of various online tools to support student learning can result in more collaboration, participation and discussion within the courses. The results of the survey indicate that the majority (more than 60%) of students either agreed or strongly agreed that these tools and applications improve their participation and contribution within courses, allowing them to communicate and collaborate effectively with others more so than traditional methods or traditional LMSs. These results correlate with the results from the case studies which show that these tools are

more useful in terms of facilitating student participation and discussions on platforms that will be available to them after graduation. Some responses and feedback by students indicate that they are more likely to participate and contribute in their courses via these tools and applications more often than with traditional LMSs or other established methods. This also can be observed from the results of the case study and the interviews when LinkedIn and other tools are used as discussion platform. As such, some responses by academics also indicate that some students had less interaction and participation with their colleagues regarding the Moodle. For example, one academic reported that:

Some students show little participation, but when there is an assessment on that, students have to be active and discuss. However, there is less participation than expected.

These findings further support the idea of Downes (2007), who argued that LMSs will be insufficient for all the needs of students and academics. The results from the interviews also indicated that Moodle has many advantages for academics with regard to e-learning, however academics have used the basic and central tools such as uploading and sharing materials and emailing, that meet their courses' objectives and goals. There is, therefore, a definite need for a combination of online tools, or more recently technologies and LMSs, that could improve e-learning, as the current study found that some academics prefer to use a combination of applications, such as Moodle, and other online tools, such as blogs and LinkedIn, whereas others prefer to use LMSs (such as Moodle), but those academics also consider these systems to be 'Web 2.0'.

With regard to another important characteristic of online tools, the triangulation of data shows that most academics and students find these applications easy to use, without the need for advanced technology. This finding correlates with the use of these tools while other results also found a positive correlation between descriptive words such as "easy to use" and online tools as well as online activities, such as blogging. This indicates that these tools are simple and offer user friendly designs therefore academic communities can harness them in teaching and learning without requiring advanced IT skills. This provides academics with the ability to design

courses with more flexibility and to allow integration between them and their students, and also among students themselves. It is an academic matter of choice, and attitudes.

The last characteristic, but most important for student learning, as discussed in Chapter 3, the adaptation of LMS services to mobile devices took longer than adaptation to social networks. Online tools such as Facebook and Twitter have already been used via smartphones, which offer the ability to download, install and use easily. There is some consensus on the use of online tools and smartphones as discussed in previous sections. Students prefer to use smartphones for accessing these tools rather than using them to access LMSs. This study confirms that smartphone use correlates with use of these tools in learning. Survey results also show a positive correlation between the use of these tools such as Facebook and smartphones, but that there is no correlation between smartphones and using LMSs. The results also showed that there is a positive correlation between learning activities on the Web and smartphones. This correlation provides evidence that these tools and applications better adapt to smartphones rather than to LMS services which are considered as a critical characteristic of these tools. Students can use these tools to learn outside the classroom. These tools were found to be more flexible and accessible than traditional LMS, as indicated previously. This also accords with earlier observations as indicated in section 8.3.1, which revealed that students believe that the availability of communication devices such as smartphones is an important factor that motivates them to use these applications, either for personal or learning purposes. These results indicate two additional main points, the contribution of smartphones in informal learning and the adaptation of new online tools to mobile devices. The extent of these contributions needs further research.

Taken together, these findings suggest that the use of emergent online tools has created an online environment via an e-learning platform. Therefore, moving outside the LMS to explore various online tools will allow DIS to enhance students learning and will help them to develop and implement these tools in their career. These tools are expanding the value of e-learning tools such as LMSs. They can be used as an open platform by students for their learning and for expanding their knowledge in their respective fields. The tools will add new value to the students' skills and

knowledge, which are difficult to achieve by using LMSs. Again, the evidence from this study suggests that online tools can provide interactive and customised learning environments through their characteristics for both graduates and future students. Currently, many universities including SQU have started to use modern LMS, which provide tools (such as blogs) and the environment to enable social learning, however a variety of new online tools offer many options for educators and students, and also support student learning after graduation. LMSs still have limited opportunities for learning and teaching. This premise agrees with earlier observations by Soumplis et al. (2011).

### **8.5 Online Activities and Gender Differences**

In the mid-1990s, women were significantly less likely than men to use the internet, however, “this gender gap in being online disappeared by 2000” (Ono & Zavodny, 2009, p. 111). During the period from 2000 to 2005, a number of studies found that males are still generally more comfortable with the internet. The emergence of new online tools such as Facebook, LinkedIn and Twitter has resulted in gender differences emerging in relation to the online activities. However, the gender gap is different across countries; depending on a society's traditional culture and the roles associated with men and women.

Some studies found no differences between males and females in adoption and use of online tools (e.g., Sandars et al., 2008; Teo, 2008; Kalpidou et al., 2011). However, there are significant studies that report some differences between genders, especially with regard to the SNSs. In reviewing the literature on gender differences and blogs, Jones et al., (2009), for example, found that female students were slightly more likely than male college students to keep a blog, since 34% of females when compared with the 31% of males kept blogs, and Martinho (2012) also found that the percentage of female weblog authors much higher than that of male authors.

In addition, findings from the previous studies regarding SNSs, reported that females are more likely to use Facebook when compared with males, particularly in western societies. All these studies were conducted in the period of 2008-2012. For example, Kolek and Saunders (2008) and Valenzuela et al., (2009) found that females are more

likely to have a Facebook account than the males. Moreover, the results from a survey by Sheldon (2009), including 260 students showed that 42% of male students had a Facebook account, compared with 58% of female students. Budden et al. (2011) conducted a study among college students, exploring the level of use of the five applications, including: Facebook, MySpace, YouTube, television viewing, and radio listening. They found that male students spent a statistically larger amount of time on YouTube than females, while female students spent more time on MySpace and Facebook, and spent more time on non-internet media (radio and television) than males. Thompson (2012) also found that females were more likely to disclose personal information about family, friends, holidays, school, and religion on Facebook than males. Finally, Martinho (2012) reviewed the current literature on online tools to identify the gender differences in the use of online tools. According to that study, females use more online networks than males.

In the GCC context, and in particular Oman, where women have been influenced by society's traditions, the internet started to become available in the period from 1992 to 1998. Although the Arabic literature reports no empirical studies that deeply investigate gender differences regarding the use of online tools in learning and teaching practice, there are several studies that provide statistical data and investigate gender differences in general. The statistical data provided by Malin (2009 and 2010a) concerning Twitter use in the GCC, showed that more than half of the platform's users in the Arab world are males, with women around the world making up a slightly larger Twitter demographic than men, with 53% over 47% in 2009 as shown in a global Twitter survey.

Conducting this study among LIS students in Oman contributes to existing knowledge on gender differences by highlighting these differences and focuses more on the significant results that show a clear gender difference, and interprets these results by combining data from the three stages of the research. The results from chi-square tests indicate that female students were more likely to keep blogs than the male students, and this indicates that male students were more likely to abandon blog usage when compared to females. This is similar to the results from Jones et al., (2009) and Martinho (2012). The results from the survey have also demonstrated that those who knew about Twitter, but did not use it, were more likely to be female

students and those who have not heard about LinkedIn and Academia.edu were more likely to be female students. In addition, the current study also indicates that male students were more likely to use YouTube as a major part of their internet usage. This is similar to the results from Budden et al. (2011) research, which found that male students spent a statistically larger amount of time on YouTube than females, as indicated above. Both female and male academics in the current study are aware of these tools, but there are differences in the level of use of these tools, as discussed earlier. Most of them have an account on SNSs, with 11 out of 12 of male academics having had an account on Facebook, and that 5 out of 5 of female academics have an account. It seems that female academics do not differ from male academics in their knowledge of SNSs.

It is also worth noting that female and male students differ in their use of online tools in personal and learning purposes with regard to SNSs, but each gender participated equally in the use of the web to browse or search for information (e.g., news and events), to send or receive emails (e.g., Hotmail, Yahoo, Gmail), and for sharing photographs or/and digital materials (e.g., Flickr). It seems that both males and females participate in these activities the same way, whether for personal or learning purposes. These three activities are common practice amongst females and males.

There are several explanations for these results. Firstly, the difference between males and females in their level of knowledge and use of Facebook is likely the result from the cultural attitudes and behaviours that have lead female students to become more concerned about their privacy. This explanation correlates with Table 6.22 B, which reports that female students (42%) were more likely to see safety and privacy concerns as an extremely important barrier or difficulty in using online tools, than males (19%). It seems that they translate their concern of safety and privacy into their use of these tools. They are afraid to participate in the type of sites that allow anyone to view their profiles. Another reason for women's lack of participation is that Facebook allows viewings of people who are tagged by others in photos, revealing relationships between people, and can often lead to harassment of users through invitations, all of which are customs that are incompatible with the values of Omani society. This has caused some problems for female students, who come from communities committed to the customs and traditions of their culture. It is worth

mentioning that some Omani families strive to maintain these customs and traditions, which include the establishment of a strong relationship with relatives and other families, as well as avoiding the problems that arise from illicit relations between males and females. They believe that these technologies might make such problems worse, so some families do not allow the use of online tools, because they are afraid that young women might establish romantic relationships with males, as mentioned by Wheeler (as cited in Sharif & Al-Kandari, 2010) in Chapter 3. This could lead to adultery, which is forbidden by Islam. Hence, the findings of this study do not support Thompson's (2012) conclusion, GCC females are afraid to disclose personal information about family, friends and religion.

This interpretation also accords with earlier observations and Arabic literature in the GCC, which reports that, female concern for safety and privacy means that they avoid using such sites. For example, Mohamed (2011) conducted a study among 325 Arab respondents in the UAE and Egypt, concluding that females are more concerned about their privacy than males, and that they tend to be more concerned with taking actions that protect their privacy, while males trust SNSs more than females. Similarly, Jones et al., (2009) found that female students were more concerned about privacy than male students, they demonstrated gender concern about storing their personal data online, however, they equally participated in online activities and privacy concerns did not affect their online practices. However, in Oman, privacy issues do affect females and their online practices associated with SNSs.

The difference between male and female students regarding blogging activities can be explained in that some students (especially males) tend to use new technologies, as reported in the case studies (stage three).

I will not use blogs in the future because there are many other options and suitable alternatives that can be used more effectively than blogs, such as Facebook and Twitter... I found Facebook and Twitter to be more effective than blogs. (S 8: Male)



It can be concluded that female students were more likely to keep blogs when compared with male students. Female students were more concerned with privacy and are afraid to move onto other applications or tools that may not have provided as much privacy; blogs have provided several options regarding privacy and safety concerns. Female students were more confident in the use of blogs than male students. This correlates with results from stage three when the academic reported that:

Most of the privacy properties are not available in the other social networks, such as Facebook, and because of our society's nature, customs, and traditions, many of the female students avoid using some of the other applications that may reveal their identities or personal information. They usually use nicknames when designing blogs for reasons related to their privacy, including the dissemination of information and sharing personal data, and other cultural and social factors.

While privacy and safety concerns are a common problem when using these tools in many parts of the world, in Omani society privacy and safety concerns are an issue for females, because of the cultural attitudes and behaviours as mentioned earlier. In other words, their culture makes a difference regarding the way females and males deal and interact with SNSs. Society's traditions, including morals, may play a role in making GCC students more concerned about their privacy. They are more aware of such issues. Islam also asks people to be careful in dealing with these kinds of tools and accustoms them to not seek to cause any harm to others, or not to use these tools in unlawful activities against, or to contradict, other religions (Christianity, Jewish, etc.).

Another reason for gender difference regarding Academia.edu and LinkedIn is that these two applications are explicitly much more work-oriented professional networking tools with a strong emphasis on personal presentation as a means of achieving professional success. This behaviour might be culturally less acceptable for GCC women, especially Omani women. This data must be interpreted with caution; LinkedIn and Academia.edu were the two online tools that had never been heard of by half of the 142 participants. However, there are observable differences in

the attitude towards the use of online tools in scholarly communication and the collaboration between academic females and males, as the interview results have reported. Academic males are more likely to use online tools in scholarly communication and collaboration, while a comparatively greater percentage of the interviewees who have mentioned that they use these applications are males.

It is worth noting that the gender difference in using online tools for learning and personal purposes also correlates with academic community level of knowledge and awareness of these tools. The use of the internet for networking and the use of Facebook to communicate and collaborate on ideas with others is influenced by their knowledge of SNSs, such as Facebook. While female students were less likely to use these tools, they were also less involved in internet and IT activities in the country. This also correlates to the challenges and the barriers using the internet among female students, 15% of them rated the “lack of awareness of the benefit of these applications for learning” as “somewhat important,” and 29% rated it as “extremely important,” when compared with only 5% of the male students who rated it as “somewhat important,” and 11% as “extremely important”. This lack of awareness of the benefit of these applications could be due to lack of knowledge of the tools, therefore females do not have the chance to use and explore their benefits in learning. This can explain the gender differences with regard to these activities.

Another reason for this gender difference might also be that while librarianship is commonly a female profession, men who go into librarianship are more likely to be high technology individuals. For example, they see librarianship as something that is internet-oriented, so they may have a predisposition towards it. This also associates with society’s nature, customs, and traditions. In Omani society, women are less involved in ICT, for example, unequal access to training (Leahy & Yermish, as cited in Elnaggar, 2008, p. 283), and Elnaggar (2008) reported that socio-cultural norms, the innate character issues of Omani females, access and training are the primary factors that inhibit Omani women from entering and adopting careers in ICT. This indicates that males have the desire to use and have knowledge of the internet and IT, which correlates with and is reflected in their attitude towards the internet. However, it is worth noting that no difference found between females and males regarding IT

skills in the current study. Therefore, this factor is not influenced by gender differences.

Another important finding was that no items were found to statistically and significantly differ across the participants' gender groupings at the .05 level with regard to their attitudes and beliefs when using various online tools within LIS courses. The male students did not differ from the female students in their response to the statements used to measure the attitudes of the two groups toward their use of various online tools in the LIS course. In other words, the results indicate that the beliefs of most male and female students are the same, even on a different level, when it comes to using online tools. Potentially, this implies that females and males significantly use the internet for their courses in the same way, but differ for other applications. This is also implying that gender is not likely to be an issue/barrier in using these tools within the courses, as long as they consider privacy and safety issues. Both males and females have positive attitudes and beliefs regarding the use of these tools within their courses and in the future workplace.

The current findings in this research provide a new understanding of gender differences in the GCC, with implication being that the major difference between males and females is related to SNSs, but not other online tools. These are newly emerged tools in a society where women interests and roles have been influenced by society's traditions, and less involved in ICT. These types of sites may conflict with the fundamental values and principles of society, and could lead to the emergence of problems for females who are highly concerned about privacy. However, there were no dramatic differences in gender with regard to the use of these tools in higher education, while both female and male students having positive attitudes and beliefs about using these tools within LIS courses.

## **8.6 Challenges and Barriers for Utilising Online Tools**

There are many barriers and challenges that can prevent an academic community from using online tools in education. These factors or barriers also impact attitudes toward using these tools for practical use. As investigated in the literature, the barriers and challenges of using online tools can be divided into four categories (see

section 3.6). Some of these challenges are the presentation of identity and privacy concerns (e.g., Gross & Acquisti, 2005; Ellison et al., 2006; del Val et al., 2010), limited institutional control over data and a lack of centrally managed or lack of control (Mott, 2010; del Val et al., 2010; Wise et al., 2011); internet filtering and the blocking of some internet applications and services (Sarrafzadeh et al., 2010); lack of access to high-speed internet or inability to connect to the internet (Sarrafzadeh et al., 2010; Stewart, 2009).

In the GCC, as indicated by the literature review, most studies on the use of the internet in the GCC focused more on incentives for and barriers against uses. Al-Wehaibi et al. (2008), for example, found that the quality of internet connections, loss of privacy when disclosing information and concerns related to intellectual property when publishing online were barriers to adopting online tools in GCC education. Al-Gharbi and Ashrafi (2010) also suggest that safety and security concerns contribute to the reluctance to adopt internet applications in Oman. Concerns about information privacy also comprise one of the challenges with regard to the use of social software, such as blogs, video sharing and SNSs by LIS students at Kuwait University (Al-Daihani, 2010). Another challenge as ITU (2012) indicated is the internet access in the GCC is costly, and prices in the Arab States, as a whole, are relatively expensive.

In the current study, the results from the questionnaires, interviews and two case studies were compared to determine whether similar results would be found. The next diagram (Figure 8.3) illustrates data triangulation from these three stages. Major barriers to the use of online tools as reported by students are the lack of internet services, including the slowness of the internet, as well as safety and privacy concerns. The academics reported two major barriers, heavy workload and insufficient time to learn about online tools, and internet services. Concerns included high internet prices, network speed and disparities in access and lack of services and facilities, security and privacy. The results from the case studies also supported these findings, as shown in the diagram (Figure 8.3)

The results of the above studies, together with the results of the three stages of the current study, indicate that the major factor or challenge for various online tools use

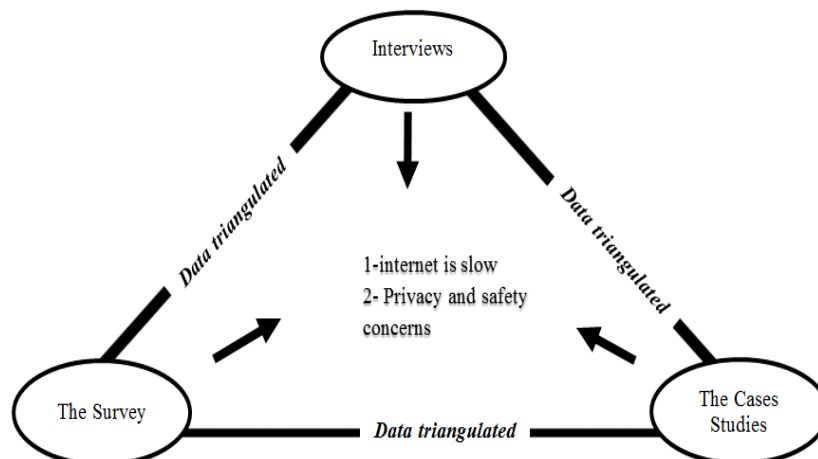
in learning and teaching is the lack of internet services, including the slowness of the internet, high internet prices, network speed and disparities in access and lack of services and facilities. The reason correlates with telecommunications companies in the country which hold a monopoly on internet-service delivery and a lack of ICT infrastructure and the internet. Alqudsi-ghabra et al. (2011) also found many factors that could inhibit development and usage of the internet in Oman such as lacks of competition, lack of a well-developed information infrastructure and high prices, which have caused the relatively slow spread of the internet in Oman.

Figure 8.3 Finding Triangulation “Barriers/Challenges of Adopting Online Tools”

1. More than seven academics agree that workload and insufficient time to learn about online tools is a barrier of shaping and adopting these technologies in teaching.

Four main barriers were associated to the internet which are:

1. **High Internet prices,**
2. **Network speed and disparities in access**
3. **Lack of services and facilities.**
4. **Security and privacy concerns.**



1. Half of the respondents reported “internet is slow” as an “extremely important” factor.

2. There were **three** other important factors related to the Internet and telecommunication companies reported by more than 70% of respondents as an important factor (either “somewhat important”, “very important”, or “extremely important”), which were:

1. **Safety and privacy concerns**
2. **Internet services are costly**
3. **Internet access policies and regulations which are ruled by telecommunications companies**

1. **Nine** of students out of ten reported that “internet is slow” is as obstacle during using blogs within the courses.
2. Few students mentioned that the computer lab annual maintenance is another problem faced them while they using blogs.
3. Four students reported that lack of awareness could be reason for not using online tools by others.
4. **Security and privacy concerns**

It is noteworthy that the results from the three stages of the research support the previous research with regard to safety and security, and reveal the same point as reported by academics and students, while 76% (n = 106) of the students reported

this as a key factor with different level of importance. Several academics raised the subject of barriers associated with privacy and security issues while using applications such as Facebook. This factor correlates strongly with the use of various online tools, especially for females. The issue of safety and security are very important in Omani society due to cultural and religion reasons as mentioned in the previous section. Students are more concerned about this issue than academics. However, while most students give this issue high priority, it does not affect the use of these tools, since many of them already use SNSs. The questionnaire results concluded that students believe this factor could prevent them from using these tools, but that those beliefs are not influenced at the same level by the practice of using those tools. This factor affect only the use of SNSs by females, as previously indicated.

With regard to internet costs, Warf and Vincent (2007) reported that Qatari Telecommunications Company has had a 15-year monopoly on internet service delivery, and OmanTel is the controlling provider of fixed and mobile telephone services. As a result, prices are too high or internet access expensive. The results of questionnaires, together with the results of ITU, indicate that internet access is costly. Of all respondents, 70.7% (n = 99) of the students rated costly internet services as a barrier to using online tools. One explanation for this is the telecommunication companies which do not allow other companies to compete in the market, thereby controlling the prices and the level of the services they offer. This also correlates with interview findings when some respondents reported that a monopoly characterises the market, resulting in high prices.

Internet access policies and regulations, which are controlled by telecommunication companies, was another factor reported by the students (70.8%, n = 99) with different levels of importance. This result supports the findings of previous research by Alrawabdeh (2009), who claimed that some telecommunication companies in the GCC have strict rules regarding internet access and use. For example, many internet applications to the service in KSA are turned down due to technical constraints, and some services, such as Skype, are not licenced by the Telecommunication Regulation Authority in Oman (Callanan & Dries-Ziekenheiner, 2012). One of the primary reasons for this is the effect on the profits of these companies (Callanan & Dries-

Ziekenheiner, 2012). There are a few points that need to be highlighted with regard to this issue, which have not yet been discussed. One of these issues is that there are many applications that can be used in positive ways however they are blocked by governments or telecommunication companies. They are not blocked because of religion reasons, but rather for political (internally or externally) or business reasons. They do not allow access to what they consider to be inappropriate content, libel, fraud or hacking. This strategy can protect a society (in particular, teens and children), and it has been working effectively however governments must define what is “inappropriate content”, since some use this term to describe any content not sanctioned by particular governments.

Regarding academics’ heavy workload and insufficient time to learn about online tools is a challenge determining use of online tools, and this needs to be addressed by the university community. As is the case at all universities throughout the world, academic staff members hold teaching and research positions. SQU assigned several courses to Arts and Social Sciences faculty, in addition to expecting their contributions via community services and publications. Some courses accommodate more than 45 students, and each course might offer three different sections. Some of the faculty teach three courses with high numbers of students and more than 12 teaching hours, and they also give lectures in both undergraduate and post-graduate courses. This increase in the numbers of teaching hours and students affects the academics’ ability to participate in other activities and to have time for self-development. As reported in the interviews, this problem is particularly evident in the College of Arts & Social Sciences, a Humanities area which has many students, as well as offering elective courses to the entire student body at the university. The demands placed on staff from the College of Arts & Social Sciences faculty are onerous. This factor, as mentioned previously, affects academics’ use of online tools within LIS courses.

In summary, the present study confirms previous findings in the GCC and contributes additional evidence that suggests that the problem of internet services remains unsolved. Findings reported from previous research, conducted in the period 2007-2012, indicated speed and prices are barriers and challenges that could stand in the way of the academic community's desire or ability to adopt online tools in higher

education. It is important to acknowledge that the Omani government has adopted many initiatives to develop the internet in the country, but it is not at the level of user satisfaction. The SQU also provides good internet services compared to other institutions in Oman, however the disparity in internet coverage varies, depending on different regions of the country. Therefore, some academics and students found that the internet in their region is not the same as in the SQU, which is located in the capital of Oman. Internet speed and connection affect the level of internet usage and, as a result, impact the way people adopt and use various online tools for different purposes.

### **8.7 Summary**

This chapter discussed the findings of three stages: Interviews, Questionnaire and Two Case Studies in which quantitative and qualitative results were combined for interpretation. Major findings are highlighted and discussed with consideration given to their comparison with previous and related studies. The chapter discussed the way academic staff within Department of Information studies at SQU in Oman adopting and using online tools in teaching practice. In addition, this chapter also discussed attitudes of LIS students toward use of these tools within LIS curriculum and the roles online tools play in supporting students' learning. Furthermore, issues regarding gender differences and challenges and barriers were highlighted and discussed. This chapter also attempted to present additional insights and discussion, by triangulated data from three stages with regard to use of online tools within LIS curriculum.



## Chapter 9 Conclusion and Recommendations

### 9.1 Introduction

Internet and web services are developing and changing very quickly, resulting in the emergence of new online tools that change the way academics and students learn, communicate and collaborate. The impact of online tools on teaching and learning is observable, they expand the learning and teaching options available to instructors or educators. The research reported in this thesis was conducted at a time when the impact of various online tools and social media, such as Facebook and Twitter, were being felt across different sectors in the GCC, including the education sector. However, there is no clear map of the utilising and adoption of these technologies and tools within the curriculums. The use of online tools in the DIS education sector is inadequately understood in the Arabic world, particularly in Oman.

Therefore, the primary purpose of this study was to explore the role of online tools in teaching and learning, focusing on the usage of these tools in a range of contexts, including professional and personal, and specifically teaching and learning. The study also sought to identify the ambiguity of the term 'Web 2.0' in the academic community by examining academic and student attitudes towards this label. The study also explored how these tools are used within LIS courses, and their characteristics as PLE compared to traditional LMS. Exploring gender differences was another goal of this study. The final goal was to determine the reasons why LIS academics and students use or do not use online tools in their teaching and learning. This chapter draws a clearer picture of the major findings according to the research questions and objectives. The chapter also provides recommendations for action in response to the major conclusions, and suggests pathways for future research.

### 9.2 Concluding Statements on the Research Objectives

The use of mixed methods and triangulation in this research helped provide a complete picture of the problem and thereby increase the validity and reliability of the research findings. The use of these methods was intended to explore and

understand a phenomenon, utilising online tool within a curriculum, rather than corroborate or adopt a theory. The results were derived from both quantitative and qualitative research methods. The interviews were presented in Chapter Five, the questionnaire was presented in Chapter Six and the outcomes of the two case studies were presented in Chapter Seven, which was considered as the final, confirmation stage. The combined results from these three stages were presented and discussed in Chapter Eight. This Chapter provides an overview of the results according to the research objectives of this study as presented in Chapter One.

### ***1. Explore the ambiguity of the 'Web 2.0' label in the academic community***

In the interviews, respondents were asked about the term 'Web 2.0'. Sub-questions were also asked about academics' definition and views of 'Web 2.0' and other educational technologies, such as LMS including Moodle. The discussion was also expanded to include a question about attitudes toward this label. Part B of the questionnaire sought information concerning students' thoughts on the term and related applications and activities. It contained 6 questions that sought information relating to 'Web 2.0' concepts and related activities, including 13 descriptive words of Web 2.0, level of knowledge/practice of 10 online activities as well as the level of knowledge of 7 particular applications or tools. Chi-square tests and Spearman correlations tests were performed in order to determine whether there were significant differences in the students' responses and attitudes concerning the particular term according to their knowledge of 'Web 2.0'. In case study two, an academic and his student were asked in depth about the 'Web 2.0' concept.

Overall findings indicated four main points that emerged from the combination of the interview and survey results. These were variety of perspectives and viewpoints regarding 'Web 2.0', the different core attributes of 'Web 2.0', the lack of a clear definition of this term and ambiguity surrounding its exact meaning. These results lead to the conclusion that the term 'Web 2.0' is ambiguous and imprecise overall, and specifically in the academic community. Results from the survey and interviews also indicated that the academic community built and developed their understanding of the 'Web 2.0' label based on their online activities, practices and experiences. The rising popularity of social media and other terms, rising ambiguity, and uncertainty

about 'Web 2.0', caused a loss of interest in the label. It was concluded that 'Web 2.0' is not a consistent label, and may never have been. Taken together, this evidence strongly suggests that Web 2.0 does not work as a consistent label.

In summary, objective one was achieved and the results further illustrated the ambiguity of 'Web 2.0' in the academic community. 'Web 2.0' is no longer a useful term to describe new online tools or emerging internet technologies. The research suggests the idea of web categorisation may no longer be appropriate or useful. Therefore, moving from overrating the importance of 'Web 2.0' to exploring other important terms and tools, and focusing on specific tools to avoid some of this ambiguity and what internet users do online will be more useful and effective.

***2. Understand the context for online tool use by academics at DIS in Oman with reference to other uses of technologies for teaching and learning, the relationship of online tools to curriculum being taught and the social context of Oman.***

In order to understand the context for online tools use by academics at DIS in Oman with reference to other uses of technologies for teaching and learning, several questions were asked in the interviews, which were divided into two main categories, internet and educational technologies, and choosing and using online tools within a curriculum. In the first category, respondents were asked several questions about the internet and LMS such as Moodle. These questions sought information relating to the general depiction of internet use in three areas, personal, professional and educational. It also contained questions about Moodle and its uses. The next category sought information relating to the academic community's knowledge of online tools.

Overall, the findings from the interviews indicated that the internet is widely used by academics in three categories: (1) personal use, including information finding and gathering (searching and browsing the internet); communication, online shopping or online transactions and services, and daily life updates; (2) professional use, including scholarly communication, scientific research and professional development; (3) and educational use, including delivering subject content, building integral parts of courses, supporting course content and facilitating communication.

Most academics used LMS or had experience with its use. There were only two interviewees who had never used Moodle or other LMSs. Moodle was widely used by academics in teaching and course delivery, although they were not directed by university to use Moodle. However, most of them used basic and central tools that meet their courses' objectives and goals and the level of the use differed from one academic to another. The survey results also showed that students had high skills in using LMSs such as Moodle. Nearly three quarters (74%, n=109) of the students had used an LMS, whereas 26% (n=38) reported that they did not use an LMS. More than half of the students (58.7%, n=64) described themselves as either "Good" or "Excellent" at using LMSs, while only 13.8% (n=15) described themselves as either "Poor" or "Very Poor" at using LMSs.

Almost all the academics were familiar with various online tools, such as Facebook, YouTube and blogs. All 17 academics were aware of social-networking tools and 94.1% (n=16) had an account with one or more of them. The majority of the academics were not familiar with podcasts or Web-conferencing. Survey results indicated that the majority of respondents (67.35%, n= 99) out of 147 were aware of the term 'Web 2.0', and 32.65% (n=48) were unaware of the term. It is also provided evidence that more than half the students had watched/downloaded online videos, uploaded/managed photos online and used social networking. More than half the 147 students had knowledge of YouTube, Wikipedia and Facebook. Meanwhile, about half of the 147 students had never heard of the online tools LinkedIn and Academia.edu. It was concluded that the majority of the LIS community is aware of online tools such as Facebook and blogs. However, there is a lack of awareness about some other applications such as podcasts.

The majority of the LIS academic community are aware of some of these tools due to the nature of LIS courses. The relationship between online tools and the curricula being taught is that as LIS courses become more technical they use these applications as supplementation/support tools. For example, LibraryThing was used within a classification course to help LIS students store and share book catalogues; wikis and blogs were used to share and manage resources with different courses; and LinkedIn and Academia.edu were used as discussion platforms.

In summary, objective two was achieved. The results of the three stages provided a comprehensive picture of the knowledge of online tools in the DIS community at SQU with reference to other uses of LMS such as Moodle and academic community attitudes towards Moodle and the internet.

***3. Identify the way in which online tools are utilised and perceived by academics at DIS in Oman in a range of contexts, including professional and personal, and specifically for teaching and learning***

In the interviews, several questions were asked regarding adopting and using online tools in professional and personal contexts—specifically for teaching and learning purposes. Interviewees were asked about their perception regarding Moodle and online tools in terms of their characteristics and contributions to student learning. As such, Parts B 5 and B 6 of the questionnaire sought information relating to students' online activities; they were asked to indicate the frequency of their online personal and learning activities (Tables 6.12 and 6.13). Moreover, Parts D 3, D 4 and D 5 of the questionnaire sought information relating to students' attitudes and beliefs regarding using online tools within the LIS curriculum. The two case studies also supported the findings from both stages and helped clarify a few points on the use of online tools.

Overall, findings from the interviews and case studies indicated that the academics use these tools in three categories: for (1) personal use as a social-communication channel with family and others; (2) for professional uses and research for communicating with colleagues, following the latest news of other researchers and their publications, reading conference news and working papers, seeking knowledge and advice from others and contacting researchers; and (3) educational uses relating to LIS courses. Three main activities were identified within the LIS courses: (1) resource and information sharing; (2) posting assignments for students; and (3) as a discussion board or platform for discussion. Applications were used included: Facebook, wikis, YouTube, LinkedIn, blogs, LibraryThing and Google services.

Also, results from the interviews indicated that the majority of academics are aware of some of these tools and applications, but that they are less apt to put them to actual

use and adopt them to their teaching practices. This result was attributed to three reasons: (1) heavy workloads combined with a lack of internet services; (2) some of these tools have less content control due to a lack of ownership; and (3) using other forms of e-learning such as LMSs, which impede the use of these tools. However, most IS academics believe that integrating various online tools into the learning environment can expand student learning, which indicates a positive attitude towards using these tools in education. The combined results from the three stages also indicated that these tools made contributions to improving communication and collaboration among students. Both academics and students had positive attitudes regarding using these tools within the LIS curriculum, and the important role of online tools in preparing students for the future job market. It was also indicated that student attitudes are more likely to be shaped by their views of potential applications for the future.

The results from the questionnaire indicated that the most common personal and learning activities on the Web among students are browsing or searching for information via a search engine, and sending or receiving emails via services such as Hotmail and Gmail. SNSs including Facebook were used for personal communication purposes rather than learning purposes. Also, online video sites including YouTube were used for personal purposes rather than learning purposes. The study also indicated that those who use these tools for personal purposes are more likely to use them for learning purposes.

The results that emerged from the triangulation of the three stages indicated several characteristics and features of online tools compared with traditional LMS. The ability to access at any time, ease of use, flexible systems, variety and functionality of tools and the ability to own and manage personal learning experiences. These results suggest that using various online tools can create effective teaching and learning environments. It is academic and student attitudes to use that shape these tools. These tools can be used in different ways, both positive and negative, depending on the way people direct and utilise them.

In summary, objective three was achieved. The use of different techniques and approaches provided a clear picture of the way the LIS community in Oman utilise

and perceive various online tools in a range of contexts, including professional and personal use, and specifically for teaching and learning.

#### *4. Explore gender differences in attitudes of university students towards online tools*

This objective was addressed by comparing the students' answers to each question in the questionnaire based on gender. This was achieved with crosstabs, which were used to provide a table in which data could be compared. The chi-square was selected to test whether there was any difference between gender and other variables individually. The major findings were:

- Female students were more likely to see safety and privacy concerns as extremely important barriers or difficulties in shaping online tool use than males.
- Female students were more likely to keep blogs than male students, with male students were more likely to abandon blog usage compared to females. Male students were more likely to use and have an account on Facebook than females. They also were more likely to use YouTube as a major part of their internet usage than females. Those who knew about Twitter but did not use it were more likely to be female, and those who had not heard about LinkedIn and Academia.edu were more likely to be female.
- Both female and male academics were aware of these tools, but there were differences in the level of use of these tools.

No items were found to statistically and significantly differ across the participants' gender groupings at the .05 level with regard to their attitudes and beliefs about using various online tools within LIS courses. Both female and male students seemed to have similar attitudes and were likely to develop the same beliefs.

In summary, objective four was achieved. The major differences between male and female students were related to the use of SNSs such as Facebook. These differences were strongly influenced by cultural attitudes and behaviours, and the level of knowledge and awareness of these tools. Female's attitudes have been influenced by

society's traditions with regard to the use of some of these tools, particularly SNSs. However, both female and male students had positive attitudes and beliefs about using these tools within LIS courses.

***5. Determine the reasons why LIS academics as well as students use or do not use online tools in their teaching and learning, focusing on incentives for and barriers to adoption and innovation***

Data triangulation from the three stages of the research illustrated several barriers to the adoption and use of online tools by the academic community. In the interviews, respondents were asked the following question: What are some barriers/challenges that could prevent you from adopting and using online tools? As such, in Part D 2 of the questionnaire, respondents were asked to rate their perceived importance of 15 barriers and/or challenges within their use of online tools. In both case studies, respondents were also asked about the challenges and barriers to the implementation of blogs and LinkedIn within the LIS curriculum.

Qualitative and quantitative data from the three stages indicated that lack of internet services; various concerns including high internet prices, network speed and disparities in access and lack of services and facilities; and security and privacy were the major barriers to the use of online tools. Qualitative data from the two cases also supported this finding. Students were more concerned about the internet, whereas academics were more concerned about their heavy workloads that result in insufficient time to learn about these tools. There were a range of reasons for these results; for example, the lack of competition, the lack of a well-developed information infrastructure in the country and cultural attitudes and behaviours.

Academics and students were also asked to express their motivations and incentives for using online tools. Part D 1 of the questionnaire included a list of factors and respondents were asked to indicate their perceived importance and describe the frequency with which they undertook nine factors. Academics were asked about the reasons behind using these tools within courses or for other purposes. The quantitative data indicated that learning new things by using the internet was the factor of greatest importance to the respondents (mean=5.89). The availability of



communication devices and smart devices such as smartphones has facilitated the use of various online tools such as Facebook and Twitter (mean=5.71). The qualitative data indicated several keys that motivated academics to use these tools, principally the struggle to survive in the digital academic environment, job market requirements and remaining competitive.

In summary, objective five was achieved. The use of mixed methods provided a broader perspective on this issue. The statistical analyses from the survey, along with the interviews and case studies, made the issue of challenges and barriers clearer, while the triangulation and combination showed similar factors emerging from the quantitative and qualitative data, not to mention that the two case studies supported the results of the first two stages. The issues of privacy and security on the internet, and internet speed, were given close attention by respondents in this study.

### **9.3 Recommendations**

Several important unexpected and expected issues associated with the use of online tools in teaching and learning emerged from this research. These issues need to be considered by SQU, DIS and the Oman government. Therefore, a list of recommendations has been prepared with a view to develop and enhance the use of online tools within the curriculum, especially at DIS in Oman. The research outcomes may be applicable to other LISDs in the GCC or similar teaching areas such as knowledge management, information systems, information technology, mass communication, Internet studies, etc.

#### ***9.3.1 Recommendations for the Oman Government***

1. GCC governments, including Oman, should take the initiative in developing and enhancing internet services, focusing on network speed and disparities in access, and taking into account the access issues. As the slowness of the internet and access issues appear to be very important, the governments should take these issues into account. They should allow competition between the companies and also allow international companies to enter the Oman market to provide different services for people. Internet services should reach different

areas in the country to ensure equal access and use. The disparities in access to the internet could create a gap between people, which would have implications in the development of the countries' education sectors. It also affects the use and adoption of newer technology. The Oman government should aim to provide internet service in rural and urban areas, at schools and public libraries, and provide wireless access in public places to encourage people to use the internet. Establishing stable strategic plans for the development of the internet in the country, and consulting with specialists and experts, are necessary initiatives to solve this problem.

2. The Oman government should play an important role in raising awareness among citizens and directing them toward the optimal use of these tools, and also warning them of the consequences of negative usage and its potential impact on the values of Omani communities and culture. As most students access the internet via mobile devices, it is becoming necessary to raise awareness among society with regard to the use of various internet applications. This can be done through social media, TV programmes and also raising awareness amongst students, teachers and faculty members on how these technologies can be directed in both positive and negative ways and how they can affect students' learning.
3. The Ministry of Education and the Ministry of Higher Education have to work together to create stable strategic plans for the development of education and "curricular reform". This includes preparing schools for curricular reform and planning for technology. All universities and colleges have to consider some degree of curricular reform to meet the many challenges of learning in this century. These changes should include a variety of programmes that can meet the needs of academics, instructors and students. This will encourage students to develop positive attitudes and values, and involve themselves in this social world.

### ***9.3.2 Recommendations for Sultan Qaboos University***

1. SQU should aim to create stable strategic plans for the development of academic staff skills and innovations, and reward those who show the best use of various internet applications in teaching practise. The CET at SQU supports

faculty members with the latest technologies and encourages the adoption of best instructional practices in order to enhance teaching. However, the SQU should play an important role in encouraging all academics to adopt and use the latest technologies and internet applications. This can be done through reconsidering teaching hours and encouraging knowledge and experience sharing between teachers with regard to the use and adoption of various online tools for teaching. Some academics have the desire to use these tools but need more encouragement and motivation to do so. The university should provide incentives for academic excellence and rewards for best practise and shaping the use of these tools in education.

### ***9.3.3 Recommendations for the Department of Information Studies***

1. LIS academics need to explore and harness the various online tools that can effectively be used within the LIS curriculum. DIS should review the benefits of these tools and applications within the LIS curriculum, and conduct research on how these tools can be best implemented in LIS courses. There are many possible uses for the various online tools in LIS education in collaborative and individual learning. Examples of some activities and applications which can be used within the LIS curricula of particular units or courses are listed below: (these examples are informed by the researcher's knowledge and experience of the Department):
  - Adding new material and regularly update content (e.g., Wikis and blogs).
  - Professional networks for managing a professional identity, and build and engage a professional network (e.g., LinkedIn and Academia.edu)
  - File sharing, tracking, citing (e.g., Google services include Google+, Citations, etc.).
  - Social cataloging web application for storing and sharing book catalogs (e.g., LibraryThing, etc.)
  - Online File Sharing, Storage & Backup (e.g., Dropbox, FlipDrive, etc.).
  - Social bookmarking and publication-sharing system (e.g., Social Citation such as BibSonomy and EasyBib).
  - Online survey design (e.g., Google. Docs, SurveyMonkey, etc.)

- Lesson plans, classroom materials, and instructional resources (e.g., BetterLesson)

2. LIS academics need to teach their students about social media and online tools, and focus on ethics issues, intellectual property and privacy and the social context of Oman. For example, using privacy settings on SNSs. It is also important to consider how these applications can be applied in library services in the workplace. There is a range of issues raised by the widespread use of these tools, such as how Facebook includes eavesdropping, invasions of privacy and piracy of intellectual property. All LIS students should have a clear idea about these issues when they use and implement these tools in the library services in their future workplace.

3. Enhance and facilitate knowledge and experience sharing between LIS academics, as well as between LIS academics in GCC regarding using various online tools within LIS courses. Departments of information studies in the GCC, particularly Oman, could support this by encouraging academics to share their experiences of online tools through a series of workshops to benefit and train others in their use within the LIS curriculum. These workshops could be conducted each semester and coordinated with other departments.

#### **9.4 Future Research Directions**

Combining data from all three stages was important in increasing the reliability and validity of this research and helping to explore different issues that need further investigation in the future, especially in this age of Web development, the emergence of smart devices and the Arab revolution. The following are several suggestions for future research:

- Examine the contribution of smartphones to informal learning and the adaptation of new online tools to mobile devices.
- Explore the need for information professionals at libraries in the age of social media and social networks.
- Study students' learning styles and online tools in the GCC.
- Look at social networking and privacy issues in Oman; focus on gender issue and privacy management on social networks.

- Examine what is impeding internet development in the GCC: focus on economic or political issues.
- Explore the effects of gender on student learning and class participation within online tools.
- Look at awareness, information literacy and research sharing opportunities, as well as privacy concerns, regarding existing and emerging networking tools.

The survey instrument could be modified to include all students at SQU, whose survey responses could provide more details on the use of online tools in learning. As mentioned in Chapter 4, this research will be conducted over five years thereby comparing changes due to internet development and the Arab Spring. The survey instrument can also be modified to include all of the LIS students in the GCC as well as all LIS academics in the GCC. This study also suggests several projects that can be funded by SQU or other GCC universities or governments, and the researcher plans to take part in some of these projects:

- *Social medial, culture changes and religious traditions in the GCC.* This will address the question of whether social media or social networking changes people's culture and traditions in the GCC, in term of relationships, communication and social practices. Do these tools affect religious practises in the Gulf? What are GCC families' attitudes towards these tools in their social lives?
- *Information security and privacy concerns.* These are critical issues not only in the Arab world, but also in the rest of the world. Information security and privacy has been a source of concern when teaching and learning on these tools, especially SNSs where information is openly revealed and shared. To what extent do academic communities trust these tools in the GCC? To what extent do social and cultural factors influence the users' privacy concern and trust?
- *Information evaluation in the age of social media.* Information is power for nations and governments. Exploring how people evaluate the information they receive and send will become very important in the age of social media. How do people deal with the news they receive? Do they have any criteria to judge news value or accuracy before they share it with others? Information professionals, including librarians, should develop new criteria to evaluate information exchanges using emerging forms of media.

## **9.5 The Thesis in Brief: Final Comments**

This study is one of the most detailed qualitative and quantitative investigations of the use of online tools in Oman, and it is one of the first detailed studies to examine the ambiguity of the 'Web 2.0' label in the academic communities. It is a vital research project because of the variety of results, providing a comprehensive understanding of the context for online tool use by academics at DIS in Oman with reference to other uses of technologies such as LMS and the internet for teaching and learning.

This study raises key questions around issues of gender and SNSs in the GCC, and the problem of the network speed and disparities in access which strongly support the previous studies in the GCC. The findings of this research also help understanding of the factors influencing some academics' reluctance to use online tools and applications in the classroom. The findings also highlight the importance of smartphone and the impact of recent events in the Arab world of online behaviour and trends.

The work presented in this thesis is very important for Omani researchers for two reasons. Firstly, it can be considered as a starting point for developing new questions and raising various issues regarding the use of these tools and related issues in Oman. Focusing on facts and actual uses is more useful than supposition regarding technology uses. Secondly, it makes a significant contribution to the development of knowledge regarding the use of online tools through identifying the way in which these tools are adopted and perceived by academics as well as students at DIS in Oman in a range of contexts, including professional and personal, and specifically for teaching and learning.

This study also recommends adopting mixed methods and triangulation to address these issues, rather than relying on one method. The outcome of this research draws a clear map of the adoption and use of various online tools in teaching, which can help other researchers in Oman to start to address different issues related to the use of these tools in the country. The knowledge, views and concepts presented in this research help to produce better results in future work.

## Bibliography/Reference List

*Note: all cited Arabic resources are distinguished in brackets at the end of each reference as (Source in Arabic).*

- Abdelraheem, A. & Al Musawi, A. (2003). Instructional Uses of Internet Services by SQU Faculty Members (Part 1). *International Journal of Instructional Media*, 30(1), 45-57. Retrieved from <http://www.questia.com/library/1G1-107801000/instructional-uses-of-internet-services-by-sultan>
- Abdelraheem, A. Y. (2006). The implementation of e-learning in the Arab universities: Challenges and opportunities. *Proceedings of DLI 2006*, 145-155.
- Abdelrahman, A. K. (2001). Using computers in the programming of qualifying teachers of Arabic in the faculties of education in Egypt. In C. Montgomerie & J. Viteli (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2001* (pp. 863-868). Chesapeake, VA: AACE. Retrieved from <http://www.editlib.org/p/8764>
- Abdulla, A. (2010). *Contemporary socio-political issues of the Arab Gulf moment*. London: The Centre for the Study of Global Governance. Retrieved from <http://www2.lse.ac.uk/government/research/resgroups/kuwait/documents/PaperAbdulla.pdf>
- Abouchedid, K., & Eid, G. M. (2004). E-learning challenges in the Arab world: Revelations from a case study profile. *Quality Assurance in Education*, 12(1), 15-27. doi:10.1108/09684880410517405
- Academia.edu (2012). About Academia.edu. Retrieved from <http://www.academia.edu/about>
- Agazio, J., & Buckley, K. M. (2009). An untapped resource: Using YouTube in nursing education. *Nurse Educator*, 34(1), 23-28.
- Aghaei, S., Nematbakhsh, M. A., & Farsani, H. K. (2012). Evolution of the World Wide Web: From Web 1.0 to Web 4.0. *International Journal of Web & Semantic Technology*, 3(1), 1-10.
- Ahmad, P., Hussain, A., & Aqil, M. (2013). Use of web 2.0 in Saudi Arabia universities. *International Journal of Information Dissemination and*

- Technology*, 3(3), 158-166. Retrieved from <http://www.ijdt.com/index.php/ijdt/article/view/158-166>
- Ahmed, N. & Al-Khanjari, Z. (2012). Effect of Moodle on Learning: An Oman Perception. *International Journal of Digital Information and Wireless Communications (IJDIWC)* 1(4), 782-788.
- Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *Internet and Higher Education*, 11, 71-80. doi:10.1016/j.iheduc.2008.05.002
- Akinyemi, A. (2003). Web-based learning and cultural interference: Perspectives of Arab students. In G. Richards (Ed.), *Proceedings of World Conference on ELearning in Corporate, Government, Healthcare, and Higher Education 2003* (pp. 1858-1862). Chesapeake, VA: AACE.
- Al Harthy, M. A. (2011). *Private higher education in the Sultanate of Oman: Rationales, development and challenge* (Doctoral dissertation, University of Kassel). Retrieved from <http://kobra.bibliothek.uni-kassel.de/bitstream/urn:nbn:de:hebis:34-2011062237904/5/ThesisMasoudAlHarthy.pdf>
- Al kindi, S. S., & Al hashmi, S. M. (2012). Use of social networking sites among Shinas College of Technology students in Oman. *Journal of Information & Knowledge Management*, 11(1), 1-9. Retrieved from <http://www.worldscientific.com/doi/abs/10.1142/S0219649212500025>
- Al kindi, S. S., & Al-Suqri, M. N. (2012). Social networking sites as marketing tools in information institutions and the role of the user in marketing process. *Iraq Academic Scientific Journal*, 13 (1/2), 47-80. (source in Arabic)
- Al kindi, S. S., & Al-Suqri, M. N. (2013). Investigating faculty decisions to adopt social networking sites (SNSs): The case of Sultan Qaboos University in Oman. *International Research*, 3(4), 687-704. Retrieved from [http://irjilis.com/wp-content/uploads/2013/12/8\\_IR155.pdf](http://irjilis.com/wp-content/uploads/2013/12/8_IR155.pdf)
- Al kindi, S. S., & Al-Suqri, M. N. (2013). Social networking sites as marketing and outreach tools of library and information services. *Global Journal of Human Social Science Research*, 13(2), 1-14.
- Al Musawi, A. S., & Abdelraheem, A. Y. (2004). E-learning at Sultan Qaboos University: Status and future. *British Journal of Educational Technology*, 35(3), 363-367.



- Al-Musawi, A. (2007). Current status of educational technologies at Omani higher education institutions and their future prospective. *Educational Technology Research and Development* 55 (4), 395-410.
- Al-Aufi, A. S. S. (2007). *Networked research and scholarly communication in a developing Arabic country: An investigation of Sultan Qaboos University, Oman* (Doctoral dissertation). Retrieved from [http://link.library.curtin.edu.au/p?pid=CUR\\_ALMA2178011940001951](http://link.library.curtin.edu.au/p?pid=CUR_ALMA2178011940001951)
- Al-Daihani, S. (2010). Exploring the use of social software by master of library and information science students. *Library Review*, 59(2), 117-131.  
doi:10.1108/00242531011023871
- Al-Doub, E., Goodwin, R., & Al-Hunaiyyan, A. (2008). Student's attitudes toward e-learning in Kuwait's higher education institutions. *16th International Conference on Computers in Education*. Taipei, Taiwan. Retrieved from <http://www.apsce.net/icce2008>.
- Al-Fadhli, M. (2008). *Web 2.0 + library = Library 2.0 / what is Library 2.0?*. (Unpublished) [Report]. Retrieved from [http://eprints.rclis.org/bitstream/10760/11086/1/Web\\_2.0\\_%26\\_Library\\_2.0.pdf](http://eprints.rclis.org/bitstream/10760/11086/1/Web_2.0_%26_Library_2.0.pdf)
- Al-Gattoufi, S., Al-Naabi, S., & Gattoufi, B. (2011). Readiness for shifting from a traditional higher education learning system to an e-learning system: A case study from the Sultanate of Oman. *Journal of College Teaching & Learning*, 4(11), 55-60.
- Al-Gharbi, K., & Ashrafi, R. (2010). Factors contribute to slow Internet adoption in Omani private sector organizations. *Communications of the IBIMA*, 2010, 1-10. doi:10.5171/2010.698412
- Al-Harhi, A. S. (2005). Distance higher education experiences of Arab Gulf students in the United States: A cultural perspective. *International Review of Research in Open and Distance Learning*, 6(3), 1-14.
- Al-hawari, M., Meloche, J., & Al-halabi, S. (2009). A preliminary investigation of the factors that influence the e-learning adoption in higher education institutes in emerging societies. In T. Bastiaens et al. (Eds.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* (pp. 2345-2352). Retrieved from <http://www.editlib.org/p/32811>

- Al-Mufaraji, M. N., (1992). Libraries and library education in Oman. *Journal of Information Science*, 18(6), 471-479.
- Ali, G. E., & Magalhaes, R. (2008). Barriers to implementing e-learning: A Kuwaiti case study. *International Journal of Training and Development*, 12(1), 36-53. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-2419.2007.00294.x/pdf>
- Al-Jaber, H., & Dutta, S. (2008). Qatar: Leveraging technology to create knowledge based economy in the Middle East. *Global Information Technology Report, 2007-2008*, 133-143.
- Al-Jenaibi, B. (2011). The use of social media in the United Arab Emirates: An initial study. *European Journal of Social Science*, 23(1), 84-97.
- Al-Khalidi, S. (2007). *Education policies in the GCC states*. Dubai: Gulf Research Center. Retrieved from <http://www.isn.ethz.ch/Digital-Library/Publications/Detail/?fecvnodeid=127384&dom=1&groupot593=0c54e3b3-1e9c-be1e-2c24-a6a8c7060233&lng=en&fecvid=21&v21=127384&ots627=0c54e3b3-1e9c-be1e-2c24-a6a8c7060233&id=97639>
- Al-Khalifa, H. S. (2010). Finding a place for Twitter in higher education. *eLearn*, 2010(5), 6. doi:10.1145/1795374.1821980
- Allen, M. (2009). Education and the Internet Web 2.0 & renewed innovation in online learning. In *Teaching and learning for global graduates. Proceedings of the 18th Annual Teaching Learning Forum (2009), Perth*. Retrieved from <http://www.scribd.com/doc/41834420/Education-and-the-Internet-Web-2-0-renewed-innovation-in-online-learning>
- Allen, M. (2011, March). *Networked, integrated, augmented: Towards a future when all learning is e-learning*. A presentation for the Centre for Studies in Higher Education University of Melbourne, Australia. Retrieved from <http://netcrit.net/content/future-e-learning2011.pdf>
- Allen, M. (2012). What was Web 2.0? Versions as the dominant mode of internet history. *New Media & Society*, 15(2), 260-275.
- Allen, M., & Long, J. (2009, October). Learning as knowledge networking: Conceptual foundations for revised uses of the Internet in higher education. *Proceedings of the World Congress on Engineering and Computer Science*, 1, 20-22.

- Alm, A. (2006). CALL for autonomy, competence and relatedness: Motivating language learning in Web 2.0. *JALT CALL Journal*, 2(3), 29-38.
- Al-Ansari, H. (2006). Internet use by the faculty members of Kuwait University. *Electronic Library*, 24(6), 791-803. doi: 10.1108/02640470610714224
- Alqudsi-ghabra, T. M., Al-Bannai, T., & Al-Bahrani, M. (2011). The Internet in the Arab Gulf Cooperation Council (AGCC): Vehicle of change. *International Journal of Internet Science*, 6(1), 44-67.
- Alrawabdeh, W. (2009). Internet and the Arab world: Understanding the key issues and overcoming the barriers. *International Arab Journal of Information Technology*, 6(1), 17-33.
- Al-Senaidi, S., Lin, L., & Poirot, J. (2009). Barriers to adopting technology for teaching and learning in Oman. *Computers & Education*, 53(3), 575-590.
- Al-Suqri, M. N. (2008). Information needs and seeking behaviour of social science scholars at Sultan Qaboos University in Oman: A mixed-method approach. *Dissertation Abstracts International*, 68(12), 4905A.
- Al-Suqri, M. N. (2010). Collaboration in library and information science education in the Gulf Co-operation Council (GCC): Current status, challenges and future trends. *Emporia State Research Studies*, 46(2), 48-53.
- Al-Suqri, M. N., Al-Kindi, S. S., & Al-Sarmi, A. H. (2013, August). *Development of the new information industries in the Middle East: The risks and opportunities for the field of library and information science in Oman*. Paper presented at the meeting of IFLA LIS Education in Developing Countries Special Interest Group (SIG), Singapore. "The Future of LIS Education in Developing Countries: The Road Ahead."
- Al-Wehaibi, K., Al-Wabil, A., Alshawi, A., & Alshankity, Z. (2008). Barriers to Internet adoption among academics in Saudi Arabian universities. In J. Luca & E. Weippl (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2008* (pp. 24-33). Chesapeake, VA: AACE. Retrieved from <http://www.editlib.org/p/28372>
- Al-Yousef, N. (2009). *The status of women in the Arab Gulf countries*. Doha: GCC Secretariat. Retrieved from <http://faculty.ksu.edu.sa/NourahAlyousef/Publications/Women%20in%20the%20Gulf.pdf>

- Alzahrani, I., & Woollard, J. (2012, April). *The potential of wiki technology as an e-learning tool in science and education: Perspectives of undergraduate students in Al-Baha University, Saudi Arabia*. Presented at the 2nd International Conference on E-Learning & Knowledge Management, Kuala Lumpur, Malaysia.
- Amer, A. A. (2004). International report on literacy research, Sultanate of Oman. *Reading Research Quarterly*, 39(4), 480-481.
- An, Y. J., & Williams, K. (2010). Teaching with Web 2.0 technologies: Benefits, barriers and lessons learned. *International Journal of Instructional Technology and Distance Learning*, 7(3), 41-48.
- Anderson, P. (2007). What is Web 2.0? Ideas, technologies and implications for education. *JISC Technology and Standards Watch (Technical Report 1-64)*. Retrieved from <http://www.jisc.ac.uk/media/documents/techwatch/>
- Andriole, S. J. (2010). Business impact of Web 2.0 technologies. *Communications of the ACM*, 53(12), 67-77. doi:10.1145/1859204.1859225
- Arab Social Media Report (2011). Facebook usage: Factors and analysis. *Dubai School of Government*, 1(1), 1-20. Retrieved from <http://www.dsg.ae/portals/0/ASMR%20Final%20May%2008%20high.pdf>
- Arab Social Media Report (2012). Social media in the Arab world: Influencing societal and cultural change? *Dubai School of Government*, 2(1), 1-29. Retrieved from <http://www.arabsocialmediareport.com/UserManagement/PDF/ASMR%204%20updated%2029%2008%2012.pdf>
- Armstrong, J., & Franklin, T. (2008). *A review of current and developing international practice in the use of social networking (Web 2.0) in higher education (Report No. 17702)*. Retrieved from <http://www.franklin-consulting.co.uk/LinkedDocuments/the%20use%20of%20social%20networking%20in%20HE.pdf>
- Arteaga Sánchez, R., Cortijo, V., & Javed, U. (2014). Students' perceptions of Facebook for academic purposes. *Computers & Education*, 70, 138-149.
- Babbie, E. (2001). *The practice of social research* (9th ed.). Belmont, CA: Wadsworth Thomson Learning.

- Barassi, V., & Treré, E. (2012). Does Web 3.0 come after Web 2.0? Deconstructing theoretical assumptions through practice. *New Media & Society, 14*(8), 1269-1285. doi:10.1177/1461444812445878
- Barbour, K., & Marshall, D. (2012). The academic online: Constructing persona through the World Wide Web. *First Monday, 17*(9). Retrieved from <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/3969/3292>
- Barker, V. (2009). Older adolescents' motivations for social network site use: The influence of gender, group identity, and collective self-esteem. *Cyber Psychology & Behavior, 12*(2), 209-213. doi:10.1089/cpb.2008.0228
- Barnes, N. G., & Lescault, A. M. (2012). The 2011 Inc. 500 social media update: Blogging declines as newer tools rule. *Center for Marketing Research Charlton College of Business: University of Massachusetts Dartmouth*  
Retrieved from [http://www.umassd.edu/media/umassdartmouth/cmr/studiesandresearch/2011\\_inc500.pdf](http://www.umassd.edu/media/umassdartmouth/cmr/studiesandresearch/2011_inc500.pdf)
- Barriball, K. L., & While, A. (1994). Collecting data using a semi-structured interview: A discussion paper. *Journal of Advanced Nursing, 19*, 328-335.
- Barsky, E. (2006). Introducing Web 2.0: Weblogs and podcasting for health librarians. *Journal of Canadian Health Library Association, 27*(2), 33-34. doi:10.5596/c06-013
- Barsky, E., & Giustini, D. (2007). Introducing Web 2.0: Wikis for health librarians. *JCHLA / JABSC, 28*, 147-150. doi:10.5596/c07-036
- Barsky, E., & Purdon, M. (2006). Introducing Web 2.0: Social networking and social bookmarking for health librarians. *Journal of the Canadian Health Libraries Association, 27*(3), 65-67. doi:10.5596/c06-024
- Bartlett-Bragg, A. (2006). *Reflections on pedagogy: Reframing practice to foster informal learning with social software*. Retrieved from [www.dream.sdu.dk/uploads/files/Anne%20Batlett-Bragg](http://www.dream.sdu.dk/uploads/files/Anne%20Batlett-Bragg).
- Bawden, D., Robinson, L., Anderson, T., Bates, J., Rukauskiene, U., & Vilar, P. (2007). Towards Curriculum 2.0: Library / information education for a Web 2.0 world. *Library and information Research, 31*(99), 14-25.
- Behl, D., Fitzgerald, J., & Vrazalic, L. (2007). Barriers to e-learning for students in the United Arab Emirates and Oman. In T. Bastiaens & S. Carliner (Eds.),

- Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2007* (pp. 2334-2338). Chesapeake, VA: AACE. Retrieved from <http://www.editlib.org/p/26707>
- Berg, S. (2011). Web 2.0 technologies in higher education teaching: A practical introduction. *Kentucky Journal of Excellence in College Teaching and Learning*, 8(1), 20-27.
- Berners-Lee, T. (2001). *Weaving the web: Origins and future of the World Wide Web*. Mason, OH: Texere Publishing.
- Bhappu, A. D., Ebner, N., Kaufman, S., & Welsh, N. (2009). Online communication technology and relational development. In C. Honeyman, J. Coben, & G. D. Palo (Eds.), *Rethinking negotiation teaching: Innovations for context and culture* (pp. 239-249). Saint Paul, MN: DRI Press.
- Bijker, W. E., & Law, J. (1992). *Shaping technology/building society: Studies in socio-technical change*. Cambridge, MA: MIT Press.
- Blinn, N., Lindermann, N., Fäcks, K., & Nüttgens, M. (2009). Web 2.0 in SME networks: A design science approach considering multi-perspective requirements. In *Value creation in e-business management* (pp. 271-283). Heidelberg, Germany: Springer Berlin.
- Boos, R. (2009, October 28). Social networking sites and libraries. *Docstoc*. Retrieved from [www.ala.org/ala/mgrps/divs/pla/.../SocialNetworking.pdf](http://www.ala.org/ala/mgrps/divs/pla/.../SocialNetworking.pdf)
- Borenstein, J. (2008). Privacy: A non-existent entity. *Technology and Society Magazine, IEEE*, 27(4), 20-26.
- Bosch, T. E. (2009). Using online social networking for teaching and learning: Facebook use at the University of Cape Town. *Communication: South African Journal for Communication Theory and Research*, 35(2), 185-200. doi:10.1080/02500160903250648
- boyd, D. M., & Ellison, N.B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210-230. doi: 10.1111/j.1083-6101.2007.00393.x
- Brace, I. (2008). *Questionnaire design: How to plan, structure and write survey material for effective market research* (2nd ed.). London: Kogan Page.
- Braender, L. M., Kapp, C. M., & Yeras, J. (2009). Using web technology to teach students about their digital world. *Journal of Information Systems Education*, 20(2), 145-153.

- Bratsas, C., Kapsas, G., Konstantinidis, S., Koutsouridis, G., & Bamidis, P. D. (2009, August). A semantic wiki within Moodle for Greek medical education. *In Proceedings of the 22nd IEEE International Symposium on Computer-Based Medical Systems* (pp.-6), Washington, DC: IEEE computer society press. doi: 10.1109/CBMS.2009.5255417
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Brown, J. S., & Adler, R. P. (2008). Open education, the long tail, and learning 2.0. *Educause Review*, 43(1), 16-20.
- Bryman, A. (2004). Interviewing in qualitative research. In *Social research methods* (pp. 318-344). Oxford: Oxford University Press. Retrieved from <http://www.comp.dit.ie/dgordon/Podcasts/Interviews/chap15.pdf>
- Budden, C. B., Anthony, J. F., Budden, M. C., & Jones, M. A. (2011). Managing the evolution of a revolution: Marketing implications of internet media usage among college students. *College Teaching Methods & Styles Journal*, 3(3), 5-10.
- Bughin, J., & Manyika, J. (2007). *How businesses are using Web 2.0: A McKinsey Global Survey*. San Francisco, CA: McKinsey & Company. Retrieved from [http://www.skmf.net/fileadmin/redaktion/aktiver\\_content/01\\_Events/080514\\_SWISS\\_KM\\_Tool\\_Tag/Track\\_0\\_Other\\_Material/0005\\_How\\_firms\\_use\\_Web20.pdf](http://www.skmf.net/fileadmin/redaktion/aktiver_content/01_Events/080514_SWISS_KM_Tool_Tag/Track_0_Other_Material/0005_How_firms_use_Web20.pdf)
- Bughin, J., Chui, M., & Miller A. (2009). How companies are benefitting from Web 2.0: McKinsey Global Survey results. *McKinsey Quarterly*, 9, 10-17. Retrieved <https://www.mckinseyquarterly.com/PDFDownload.aspx?ar=2432>
- Burke, S., Snyder, S., & Rager, R. C. (2009). An assessment of faculty usage of YouTube as a teaching resource. *Internet Journal of Allied Health Sciences and Practice*, 7(1), 1-8. Retrieved from <http://94.23.146.173/ficheros/3402828c489ed3ad73e86af7ffe36ea6.pdf>
- Burkhart, G. E., & Goodman, S. E. (1998). The internet gains acceptance in the Persian Gulf. *Communications of the ACM*, 41(3), 19-25.
- Cain, J., & Fox, B. (2009). Web 2.0 and pharmacy education. *American Journal of Pharmaceutical Education*, 73(7), 1-11.
- Callanan, C., & Dries-Ziekenheiner, H. (2012). *Safety on the line: Exposing the myth of mobile communication security*. Washington, D.C: Freedom House.

Retrieved from

<http://www.freedomhouse.org/sites/default/files/Safety%20on%20the%20Line.pdf>

- Casany, M. J., Alier, M., Mayol, E., Piguillem, J., Galanis, N., García-Peñalvo, F. J., & Conde, M. A. (2012, September). Extending Moodle services to mobile devices: The Moodbile Project. In *Sixth International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies* (pp. 24-28).
- Chan, A., & McLoughlin, C. (2008). Where are we up to? A survey of Web 2.0 uptake in a regional high school. In *Proceedings ascilite Melbourne 2008* (pp. 160-164). Retrieved from [www.ascilite.org.au/conferences/melbourne08/procs/chan.pdf](http://www.ascilite.org.au/conferences/melbourne08/procs/chan.pdf)
- Chandra, V., & Chalmers, C. (2010). Blogs, wikis, and podcasts: Collaborative knowledge building tools in a design and technology course. *Journal of Learning Design, 3*(2), 35-49.
- Charnigo, L., & Barnett-Ellis, P. (2007). Checking out Facebook.com: The impact of a digital trend on academic libraries. *Information Technology and Libraries, 26*(1), 23-34.
- Chatty, D. (2000). Women working in Oman: Individual choice and cultural constraints. *International Journal of Middle East Studies, 32* (2), 241-254.
- Chaurasia, A. (2011). Comparative study in adoption of Web 2.0 technologies between Western and Arab universities. *Journal of Computing, 3*(2), 175-179.
- Chaurasia, M., Asma, A., & Ahmed, A. (2011). Opportunities and challenges of Web 2.0 in Arab education. In S. Barton et al. (Eds.), *Proceedings of Global Learn 2011* (pp. 310-315). Retrieved from <http://www.editlib.org/p/37189>
- Chawner, B. (2008). Spectators, not players: Information managers' use of Web 2.0 in New Zealand. *Electronic Library, 26*(5), 630-649.
- Chen, Y. C., Hwang, R. H., & Wang, C. Y. (2012). Development and evaluation of a Web 2.0 annotation system as a learning tool in an e-learning environment. *Computers & Education, 58*(4), 1094-1105.
- Cheung, K. H., Yip, K. Y., Townsend, J. P., & Scotch, M. (2008). HCLS 2.0/3.0: Health care and life sciences data mashup using Web 2.0/3.0. *Journal of Biomedical Informatics, 41*(5), 694.



- Chong, E., & Xie, B. (2011). The use of theory in social studies of Web 2.0. In *Proceedings of the 44th Annual Hawaii International Conference on System Sciences: Vol. 03. HICSS*. Washington, DC: IEEE Computer Society (pp. 1-10). doi:10.1109/HICSS.2011.436
- Chong, E. K. M. (2010). Using blogging to enhance the initiation of students into academic research. *Computers & Education*, 55, 798-807.
- Chua, A. Y. K., Goh, D. H., & Lee, C. S. (2008). The prevalence and use of Web 2.0 in libraries. In G. Buchanan, M. Masoodian, & S. J. Cunningham (Eds.), *Digital libraries: Universal and ubiquitous access to information. Proceedings of the 11th International Conference on Asian Digital Libraries (ICADL)* (pp. 22-30). New York: Springer (Lecture Notes in Computer Science, 5362).
- Churchill, D. (2009). Educational applications of Web 2.0: Using blogs to support teaching and learning. *British Journal of Educational Technology*, 40(1), 179-183. doi:10.1111/j.1467-8535.2008.00865.x ; E
- Cohen, N. (2008). The valorization of surveillance: Towards a political economy of Facebook. *Democratic Communiqué*, 22(1), 5-22.
- Collis, B., & Moonen, J. (2008). Web 2.0 tools and processes in higher education: Quality perspectives. *Educational Media International*, 45(2), 93-106. doi:10.1080/09523980802107179
- Conde, M. Á., García, F. J., Casany, M. J., & Alier, M. (2010, August). Applying web services to define open learning environments. In *Database and Expert Systems Applications (DEXA), 2010 Workshop IEEE* (pp. 79-83).
- Conole, G., & Alevizou, P. (2010). *A literature review of the use of Web 2.0 tools in higher education* (Research Report No. 23154). Retrieved from [http://www.jisctechdis.ac.uk/assets/EvidenceNet/Conole\\_Alevizou\\_2010.pdf](http://www.jisctechdis.ac.uk/assets/EvidenceNet/Conole_Alevizou_2010.pdf)
- Constantinides, E., & Fountain, S. J. (2008). Web 2.0: Conceptual foundations and marketing issues. *Journal of Direct, Data and Digital Marketing Practice*, 9(3), 231-244.
- Creese, J. (2007, June). *Web 2.0/Business 2.0: New web technologies, organisations and WCM*. Paper presented the 2nd Annual Web Content Management Symposium, Organising Infinity: Web Content Management into the Future, Queensland University of Technology, Brisbane.

- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, E. E. (2003). Advanced mixed methods research design. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 209-240). Thousand Oaks, CA: Sage.
- Crook, C., Cummings, J., Fisher, T., Graber, R., Harrison, C., Lewin, C., ... Oliver, M. (2008). *Web 2.0 technologies for learning: the current landscape—opportunities, challenges and tensions* (BECTA Research Report). Retrieved from [http://partners.becta.org.uk/uploaddir/downloads/page\\_documents/research/web2\\_technologies\\_learning.pdf](http://partners.becta.org.uk/uploaddir/downloads/page_documents/research/web2_technologies_learning.pdf)
- Cummings, J., Massey, A. P., & Ramesh, V. (2009, October). Web 2.0 proclivity: Understanding how personal use influences organizational adoption. In *Proceedings of the 27th ACM International Conference on Design of Communication* (pp. 257-264).
- Dalsgaard, C. (2006). Social software: E-learning beyond learning management systems. *European Journal of Open, Distance and E-Learning*, 2006 (2). Retrieved from [http://www.eurodl.org/materials/contrib/2006/Christian\\_Dalsgaard.htm](http://www.eurodl.org/materials/contrib/2006/Christian_Dalsgaard.htm)
- Davis, C. (2009). *Web 2.0 definition, usage, and self-efficacy: A study of graduate library school students and academic librarians at colleges and universities with ALA accredited degree programs* (Doctoral dissertation, The University of Alabama TUSCALOOSA). Retrieved from [http://search.proquest.com/docview/304844103?accountid=10382.\(304844103\)](http://search.proquest.com/docview/304844103?accountid=10382.(304844103))
- Davis, I. (2005, July 4). Re: Talis, Web 2.0 and all that [Web log post]. Retrieved from <http://blog.iandavis.com/2005/07/04/talis-web-2-0-and-all-that/>
- del Val, J. L., Campos, A., & Garaizar, P. (2010). LMS and Web 2.0 tools for e-learning: University of Deusto's experience taking advantage of both. In *Education Engineering (EDUCON), 2010 IEEE* (pp. 1751-1757).
- Denscombe, M. (2008). Communities of practice: A research paradigm for the mixed methods approach. *Journal of Mixed Methods Research*, 2(3), 270-283.
- Dieu, B. (2004). Blogs for language learning. *Essential Teacher*, 1(4), 26-30.
- Downes, S. (2004). Educational blogging. *Educause Review*, 39(5), 14-21. Retrieved from <http://www.educause.net/ir/library/pdf/erm0450.pdf>

- Downes, S. (2007). Learning networks in practice. *Emerging Technologies for Learning*, 2, 19-27.
- Dutton, W. H. (2013). The social shaping of digital research. *International Journal of Social Research Methodology*, 16(3), 177-195. doi: 10.1080/13645579.2013.774171
- Ebner, M. (2007, April). E-Learning 2.0= e-Learning 1.0+ Web 2.0? In *Availability, Reliability and Security, 2007. The Second International Conference* (pp. 1235-1239).
- Ellison, N., Steinfield, C., & Lampe, C. (2006). Spatially bounded online social networks and social capital. *International Communication Association*, 36, 1-37.
- Elnaggar, A. (2008). Towards gender equal access to ICT. *Information Technology for Development*, 14(4), 280-293. doi:10.1002/itdj.20100
- Eltahawy, M. (2011, January 16). Tunisia: The first Arab revolution. *The Guardian*. Retrieved from <http://www.theguardian.com>
- Evans, M (2007). *The evolution of the Web: From Web 1.0 to Web 4.0*. Reading, Berkshire, UK: University of Reading. Retrieved from <http://www.cscan.org/presentations/08-11-06-MikeEvans-Web.pdf>
- Farmer, B., Yue, A., & Brooks, C. (2008). Using blogging for higher order learning in large cohort university teaching: A case study. *Australasian Journal of Educational Technology*, 24(2), 123-136.
- Floridi, L. (2009). Web 2.0 vs. the semantic web: A philosophical assessment. *Episteme*, 6, 25-27.
- Forment, M. A., & Guerrero, J. C. (2008). Moodbile: Extending Moodle to the mobile on/offline scenario. In I. A. Sánchez (Ed.), *IADIS International Conference Mobil Learning, Algarve* (pp. 11-18).
- Foster, A. (2004). A nonlinear model of information-seeking behavior. *Journal of the American Society for Information Science and Technology*, 55(3), 228-237. doi: 10.1002/asi.10359
- Fraenkel, J., & Wallen, N. (2000). *How to design and evaluate research in education* (7th ed.). New York: McGraw Hill.
- Franklin, T., & Van Harmelen, M. (2007). *Web 2.0 for content for learning and teaching in higher education*. Bristol: JISC. Retrieved from

<http://www.jisc.ac.uk/media/documents/programmes/digitalrepositories/web2-contentlearning-and-teaching.pdf>

- Fuchs, C., Hofkirchner, W., Schafranek, M., Raffl, C., Sandoval, M., & Bichler, R. (2010). Theoretical foundations of the web: Cognition, communication, and co-operation. Towards an understanding of Web 1.0, 2.0, 3.0. *Future Internet*, 2(1), 41-59.
- Garoufallou, E., & Charitopoulou, V. (2011). The use and awareness of Web 2.0 tools by Greek LIS students. *New Library World*, 112(11/ 12), 490-498.
- Gautreau, C. (2011, January). Motivational factors affecting the integration of a learning management system by faculty, California State University Fullerton. *Journal of Educators Online*, 8(1). Retrieved from <http://www.thejeo.com/Archives/Volume8Number1/GautreauPaper.pdf>
- Gavgani, V. Z., & Mohan, V. V. (2008, March). Application of web 2.0 tools in medical librarianship to support medicine 2.0. *Webology*, 5(1). Retrieved from <http://www.webology.ir/2008/v5n1/a53.html>
- Giddings, L. S. (2006). Mixed-methods research: Positivism dressed in drag? *Journal of Research in Nursing*, 11(3), 195-203. doi: 10.1177/1744987106064635
- Gray, D. E. (2004). *Doing research in the real world*. London: SAGE Publications.
- Gray, K., Waycott, J., Clerehan, R., Hamilton, M., Richardson, J., Sheard, J., & Thompson, C. (2009, November). *Web 2.0 authoring tools in higher education learning and teaching: New directions for assessment and academic integrity*. Paper presented at the National Roundtable of the Australian Learning & Teaching Council, Melbourne. Retrieved from <http://web2assessmentroundtable.pbworks.com/f/ASW2A+Discussion+Paper.pdf>
- Griffith, S., & Liyanage, L. (2008, June). An introduction to the potential of social networking sites in education. In I. Olney et al. *Proceedings of the Second Emerging Technologies Conference* (pp. 76-81), University of Wollongong, Wollongong. Retrieved from <http://ro.uow.edu.au/etc08/9/>
- Gross, R., & Acquisti, A. (2005). Information revelation and privacy in online social networks. In *Proceedings of the 2005 ACM Workshop on Privacy in the Electronic Society* (pp. 71-80).

- Grosbeck, G. (2009). To use or not to use web 2.0 in higher education? *Procedia-Social and Behavioral Sciences*, 1(1), 478-482.  
doi:10.1016/j.sbspro.2009.01.087
- Hafkin, N. (2002, November). *Gender issues in ICT policy in developing countries: An overview*. Paper presented at United Nations, Division for the Advancement of Women (DAW) Expert Group Meeting, Seoul, Republic of Korea.
- Halgawy, A. S., & Aman, M. M. (1992). Recent changes in library education in Egypt. *Journal of Education for Library and Information Science*, 33(3), 255-259.
- Han, Z., & Liu, Y. Q. (2010). Web 2.0 applications in top Chinese university libraries. *Library Hi Tech*, 28(1), 41-62. Retrieved from ABI/INFORM Global.
- Harrison, T. M., & Barthel, B. (2009). Wielding new media in Web 2.0: Exploring the history of engagement with the collaborative construction of media products. *New Media & Society*, 11(1-2), 155-178.
- Hartley, J. (2004). Case study research. In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 323-333). London: Sage.
- Hashemi, M., & Najafi, V. (2011). Using blogs in English language writing classes. *International Journal of Academic Research*, 3(4), 599-604.
- Hendler, J. (2009). Web 3.0 emerging. *Computer*, 42(1), 111-113.
- Herse, P., & Lee, A. (2005). Optometry and WebCT: A student survey of the value of web-based learning environments in optometric education. *Clinical and Experimental Optometry*, 88(1), 46-52.
- Hodges, C., & Repman, J. (2011). Moving outside the LMS: Matching Web 2.0 tools to instructional purpose. *Educause Learning Initiative*, September, 1-5. Retrieved from <http://net.educause.edu/ir/library/pdf/ELIB1103.pdf>
- Hovorka, D. S., & Rees, M. J. (2009, December). *Active collaboration learning environments: The class of Web 2.0*. Paper presented at the 20th Australasian Conference on Information Systems: ACIS 2009, Melbourne, Australia.
- Howcroft, D., Mitev, N., & Wilson, M. (2004). What we may learn from the social shaping of technology approach. In J. Mingers & L. Wilcocks (Eds.), *Social*

- theory and philosophy for information systems* (pp. 329-371). Chichester, UK: John Wiley
- Hoyle, R. H., Harris, M. J., & Judd, C. M. (2002). *Research methods in social relations* (7th ed.). Belmont, CA: Wadsworth Thomson Learning.
- Huang, C. D., & Behara, R. S. (2007). Outcome-driven experiential learning with Web 2.0. *Journal of Information Systems Education*, 18(3), 329-336.
- Huang, W. D., Yoo, S. J., & Choi, J. H. (2008, November). Correlating college students' learning styles and how they use Web 2.0 applications for learning. In *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* (Vol. 2008, No. 1, pp. 2752-2759). Retrieved from <http://www.editlib.org/p/30056>
- Huffaker, D. (2004). *Gender similarities and differences in online identity and language use among teenage bloggers* (Doctoral dissertation, Georgetown University). Retrieved from <http://www.davehuffaker.com/papers/davidhuffaker.pdf>
- Hughes, H. (2005). Actions and reactions: Exploring international students' use of online information resources. *Australian Academic and Research Libraries*, 36(4), 169-179.
- Hussein, A. (2009). The use of triangulation in social sciences research: Can qualitative and quantitative methods be combined? *Journal of Comparative Social Research*, (1), 1-12. Retrieved from [http://jcs.w.no/local/media/jcsw/docs/jcsw\\_issue\\_2009\\_1\\_8\\_article.pdf](http://jcs.w.no/local/media/jcsw/docs/jcsw_issue_2009_1_8_article.pdf)
- International Telecommunication Union (2012, March). *ICT adoption and prospects in the Arab region*. Geneva, Switzerland: International Telecommunication Union. Retrieved from [http://www.itu.int/dms\\_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf](http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf)
- Internet World Stats (2011). Internet users, population statistics, medial east [Data file]. Retrieved from <http://www.internetworldstats.com/stats5.htm>
- Internet World Stats (2012). Internet users, population statistics, Oman [Data file]. Retrieved from <http://www.internetworldstats.com/me/om.htm>
- Internet World Stats (2013). Facebook subscriber growth [Data file]. Retrieved from <http://www.internetworldstats.com/facebook.htm>
- Ioannou, A., & Artino, A. R. (2008). Incorporating wikis in an educational technology course: Ideas, reflections, and lessons learned. In K. McFerrin, R.

- Weber, R. Carlsen, & D. A. Willis (Eds.), *Proceedings of the Society for Information Technology & Teacher Education* (pp. 3353-3358). Chesapeake, VA: AACE.
- Jäckle, A., Roberts, C., & Peter Lynn, P. (2006). Telephone versus face-to-face interviewing: Mode effects on data quality and likely causes (Report on Phase II of the ESS-Gallup Mixed-Mode Methodology Project; ISER Working Paper 2006-41). Retrieved from [https://www.iser.essex.ac.uk/files/iser\\_working\\_papers/2006-41.pdf](https://www.iser.essex.ac.uk/files/iser_working_papers/2006-41.pdf)
- Jackson, S. L. (2009). *Research methods and statistics: A critical thinking approach* (3rd). Belmont, CA: Wadsworth/Cengage Learning.
- Jamal, A., & Melkote, S. R. (2008). Viewing and avoidance of the Al-Jazeera satellite television channel in Kuwait: A uses and gratifications perspective. *Asian Journal of Communication, 18*(1), 1-15.  
doi:10.1080/01292980701823732
- Jamlan, M. (2004). Faculty opinions towards introducing e-learning at the University of Bahrain. *International Review of Research in Open and Distance Learning, 5*(2). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/viewArticle/185/267%20on%20the%2027>
- Jenkins, H. (2010, May 24). Why participatory culture is not Web 2.0: Some basic distinctions [Web log post]. Retrieved from [http://henryjenkins.org/2010/05/why\\_participatory\\_culture\\_is\\_n.html](http://henryjenkins.org/2010/05/why_participatory_culture_is_n.html)
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14-26.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research, 1*(2), 112-133.  
doi:10.1177/1558689806298224
- Joiner, R., Gavin, J., Duffield, J., Brosnan, M., Crook, C., Durdell, A., ... Lovatt, P. (2005). Gender, Internet identification, and Internet anxiety: Correlates of Internet use. *CyberPsychology & Behavior, 8*(4), 371-378.
- Joinson, A. N. (2008). 'Looking at', 'looking up' or 'keeping up with' people? Motives and uses of Facebook. In *Proceedings of the 26th Annual SIGCHI Conference on Human Factors in Computing Systems* (pp. 1027-1036). New York: ACM.

- Jones, S., Johnson-Yale, C., Millermaier, S., & Perez, F. S. (2009). US college students' Internet use: Race, gender and digital divides. *Journal of Computer-Mediated Communication*, 14(2), 244-264. doi:10.1111/j.1083-6101.2009.01439.x; E
- Joseph, M., & Lunt, B. (2006). IT in the Middle East: An overview. *Proceedings of the 7th Conference on Information Technology Education SIGITE* (pp. 25-30). Minneapolis, Minnesota, USA: ACM. doi:10.1145/1168812.1168821
- Kajornboon, A. B. (2005, December). Using interviews as research instruments. *E-Journal for Research Teachers*, 2(1). Retrieved from <http://www.culi.chula.ac.th/e-Journal/bod/Annabel.pdf>
- Kalpidou, M., Costin, D., & Morris, J. (2011). The relationship between Facebook and the well-being of undergraduate college students. *CyberPsychology, Behavior, and Social Networking*, 14(4), 183-189.
- Kambil, A. (2008). What is your Web 5.0 strategy? *Journal of Business Strategy*, 29(6), 56-58. doi:10.1108/02756660810917255
- Kamel Boulos, M. N., & Wheeler, S. (2007). The emerging Web 2.0 social software: An enabling suite of sociable technologies in health and health care education. *Health Information & Libraries Journal*, 24(1), 2-23.
- Kang, I. (2009). *Media, Technology, and Social Practice: The Shaping of the Internet in Korea and Japan* (Doctoral dissertation, University of Wisconsin-Madison). Available from ProQuest Dissertations and Theses database. (UMI No. 3384174)
- Kanter, M., Afifi, T., & Robbins, S. (2012). The impact of parents "friending" their young adult child on Facebook on perceptions of parental privacy invasions and parent-child relationship quality. *Journal of Communication*, 62(5), 900-917. doi:10.1111/j.1460-2466.2012.01669.x
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53, 59-68.
- Kasimati, A., & Zamani, E. (2011, September-October). *Education and learning in the semantic web*. Paper presented at the 15th PanHellenic Conference on Informatics (PCI 2011), Kastoria, Greece.
- Kennedy, G., Dalgarno, B., Gray, K., Judd, T., Waycott, J., Bennett, S., ... Chuchwood, A. (2007). The Net Generation are not big users of Web 2.0 technologies: preliminary findings. In R. Atkinson, C. McBeath, S. Soong &



- C. Cheers (Eds.), Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education (pp. 517-525). Singapore: Nanyang Technology University.
- Khan, A., Jhangiani, R., Kar, S., Lewis, M., & Schmitz, J. (2010, April). Undergraduate research in Web 2.0. *Undergraduate research in web 2.0*. Midwest Instruction & Computing Symposium, 16-17 April, University of Wisconsin-Eau Claire.
- Kim, Y. M., & Abbas, J. (2010). Adoption of Library 2.0 functionalities by academic libraries and users: A knowledge management perspective. *Journal of Academic Librarianship*, 36(3), 211-218. doi:10.1016/j.acalib.2010.03.003
- Kolek, E. A., & Saunders, D. (2008). Online disclosure: An empirical examination of undergraduate Facebook profiles. *NASPA Journal*, 45(1), 1-25.
- Kosik, A. (2007). The implications of Facebook. *Sharing the Commonwealth: Critical Issues in Higher Education*, 31(3), 9-10. Retrieved <http://www.pcpa.net/March2006.pdf>
- Kules, B., & McDaniel, J. (2010). LIS program expectations of incoming students' technology knowledge and skills. *Journal of Education for Library and Information Science*, 51(4), 222-232.
- Lai, L. S., & Turban, E. (2008). Groups formation and operations in the Web 2.0 environment and social networks. *Group Decision and Negotiation*, 17(5), 387-402. doi:10.1007/s10726-008-9113-2
- Lampe, C., Ellison, N., & Steinfield, C. (2006). A face(book) in the crowd: Social searching vs. social browsing. In *Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work* (pp. 167-170). New York: ACM.
- Leaver, T. (2003). WebCT: Will the future of online education be user-friendly? *Fibreculture Journal*, 2. Retrieved from <http://two.fibreculturejournal.org/webct-will-the-future-of-online-education-be-user-friendly>
- Leaver, T. (2012). Twittering informal learning and student engagement in first-year units. In A. Herrington, J. Schrape, & K. Singh (Eds.), *Engaging students with learning technologies* (pp. 97-110). Perth, Australia: Curtin University. Retrieved from [http://espace.library.curtin.edu.au:80/R?func=dbin-jump-full&local\\_base=gen01-era02&object\\_id=187379](http://espace.library.curtin.edu.au:80/R?func=dbin-jump-full&local_base=gen01-era02&object_id=187379)

- Lederman, L. C. (1990). Assessing educational effectiveness: The focus group interview as a technique for data collection. *Communication Education*, 39(2), 117-127.
- Lemley, T., & Burnham, J. F. (2009). Web 2.0 tools in medical and nursing school curricula. *Journal of the Medical Library Association*, 97(1), 50-52.  
Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2605032/>
- Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). *Social media and young adults*. Washington, DC: Pew Internet and American Life Project. Retrieved from <http://www.pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx>
- Levy, M., & Hadar, I. (2010). Teaching MBA students the use of Web 2.0: The knowledge management perspective. *Journal of Information Systems Education*, 21(1), 55-68.
- Li, L., & Pitts, J. (2009). Does it really matter? Using virtual office hours to enhance student-faculty interaction. *Journal of Information Systems Education*, 20(2), 175-185.
- Linh, N. C. (2008). A survey of the application of Web 2.0 in Australasian university libraries. *Library Hi Tech*, 26(4), 630-653.  
doi:10.1108/07378830810920950
- LinkedIn (2012). *About LinkedIn*. Retrieved from <http://www.linkedin.com/about-us>
- Liu, E. Z. F., & Chang, Y. F. (2010). Gender differences in usage, satisfaction, self-efficacy, and performance of blogging. *British Journal of Educational Technology*, 41(3), E39-E43. doi:10.1111/j.1467-8535.2009.00939.x
- Lonn, S., & Teasley, S. D. (2009). Saving time or innovating practice: Investigating perceptions and uses of learning management systems. *Computers & Education*, 53(3), 686-694. doi:10.1016/j.compedu.2009.04.008
- Lu, H. P., & Hsiao, K. L. (2009). Gender differences in reasons for frequent blog posting. *Online Information Review*, 33(1), 135-156.  
doi:10.1108/14684520910944436
- Luo, L. (2009). Web 2.0 integration in information literacy instruction: An overview. *Journal of Academic Librarianship*, 36(1), 32-40.
- MacKenzie, D., & Wajcman, J. (1985). *The social shaping of technology: How a refrigerator got its hum*. Milton Keynes, UK: Open University Press.

- Madge, C., Meek, J., Wellens, J. & Hooley, T. (2009). Facebook, social integration and informal learning at university: It is more for socialising and talking to friends about work than for actually doing work. *Learning, Media and Technology*, 34(2) 141-155. doi:10.1080/17439880902923606
- Madhusudhan, M. (2012). Use of social networking sites by research scholars of the University of Delhi: A study. *International Information & Library Review*, 44(2), 100-113. doi:10.1016/j.iilr.2012.04.006
- Majhi, S., & Maharana, B. (2011). Familiarity of Web 2.0 and its application in learning: A case study of two Indian Universities. *International Journal of Library and Information Science*, 3(6), 120-129. Retrieved from [http://www.academicjournals.org/article/article1379517311\\_Majhi%20and%20Maharana.pdf](http://www.academicjournals.org/article/article1379517311_Majhi%20and%20Maharana.pdf)
- Malhiwsky, D. (2010). *Student achievement using Web 2.0 technologies: A mixed methods study* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3397630)
- Malin, C. (2010b, May 24). Middle East & North Africa Facebook demographics. *Spot On Public Relations*. Retrieved from <http://www.spotonpr.com/>
- Malin, C. (2010a, May 29). Twitter & customer service survey. *Spot On Public Relations*. Retrieved from <http://www.spotonpr.com>.
- Malin, C. (2009, September 8). Middle East & North Africa Twitter demographics & user habits survey. *Spot On Public Relations*. Retrieved from <http://www.spotonpr.com>
- Maness, J. M., (2006). Library 2.0 theory: Web 2.0 and its implications for libraries. *Webology*, 3(2). Retrieved from <http://www.webology.org/2006/v3n2/a25.html>
- Mangold, W. G., & Faulds, D. J. (2009). Social media: The new hybrid element of the promotion mix. *Business Horizons*, 52(4), 357-365.
- Mansour, E. (2004). The status of the Internet among university students in developing countries. *Arabic Studies in Librarianship and Information Science*, 9(3), 1-14.
- Manzalini, A., & Stavdas, A. (2008, June). A service and knowledge ecosystem for Telco3.0-Web3.0 applications. In *Internet and Web Applications and Services, 2008. ICIW'08. The Third International Conference on Internet*

- and Web Applications and Services, Athens, Greece, 325-329. doi: 10.1109/ICIW.2008.120*
- Margaryan, A., Littlejohn, A., & Vojt, G. (2009). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education, 56*(2), 429-440. doi:10.1016/j.compedu.2010.09.004
- Markham, A. N., & Baym, N. K. (Eds.). (2009). *Internet inquiry: Conversations about method*. Los Angeles: Sage Publications.
- Martinho, M. (2012). Gender differences in the use of Web 2.0 resources. *Indagatio Didactica, 4*(4), 7-22. Retrieved from <http://revistas.ua.pt/index.php/ID/article/viewArticle/1770>
- Maxwell, K., & Angehrn, A. A. (2010). Lessons learned from deploying a video-based Web 2.0 platform in an executive education context. *Proceedings of TECH-EDUCATION 2010, Athens, 19-21. doi:10.1007/978-3-642-13166-0\_28*
- Mazman, S. G., & Usluel, Y. K. (2011). Gender differences in using social networks. *Turkish Online Journal of Educational Technology, 10*(2), 133-139.
- McGill, T. J., & Klobas, J. E. (2009). A task-technology fit view of learning management system impact. *Computers & Education, 52*(2), 496-508. doi:10.1016/j.compedu.2008.10.002
- McLoughlin, C., & Lee, M. J. W. (2007). Social software and participatory learning: Pedagogical choices with technology affordances in the Web 2.0 era. In *Australasian Society for Computers in Learning in Tertiary Education (ASCILITE) Annual Conference*. Singapore, Singapore: Centre for Educational Development, Nanyang Technological University, 2007. (pp. 664-675). Retrieved from <http://www.ascilite.org.au/conferences/singapore07/procs/mcloughlin.pdf>
- Meccawy, M. (2007). An adaptive web service e-learning environment for the web. In: Saudi Innovation Conference (SIC 2007). Newcastle upon Tyne, UK
- Meccawy, M., Blanchfield, P., Ashman, H., Brailsford, T., & Moore, A. (2008). Whurle 2.0: Adaptive learning meets Web 2.0. In *Times of convergence: Technologies across learning contexts* (pp. 274-279). Verlag Berlin Heidelberg: Springer. doi:10.1007/978-3-540-87605-2\_30 [http://ipac.kacst.edu.sa/eDoc/2007/165410\\_1.pdf](http://ipac.kacst.edu.sa/eDoc/2007/165410_1.pdf)

- Millard, M., & Essex, C. (2007). Web 2.0 technologies for social and collaborative e-learning. In T. Bastiaens & S. Carliner (Eds.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2007* (pp. 1117-1121). Chesapeake, VA: AACE.  
Retrieved from <http://www.editlib.org/p/26487>
- Miller, P., (2005, August 11). Thinking about this Web 2.0 thing [Web log post].  
Retrieved from  
[http://paulmiller.typepad.com/thinking\\_about\\_the\\_future/2005/08/thinking](http://paulmiller.typepad.com/thinking_about_the_future/2005/08/thinking)
- Ministry of Higher Education. (2011). *Ministry of Higher Education*. Retrieved from  
<http://www.mohe.gov.om>
- Ministry of Information. (2012). *Oman 2005-2006*. Retrieved from  
<http://www.omanet.om/english/home.asp>
- Mirza, A. (1998). Saudi Arabia and the Internet technology. *World Conference on the WWW and Internet 98 (WebNet 98), Orlando, FL, USA*, (pp. 1-5).  
Retrieved from  
<http://repository.ksu.edu.sa/jspui/bitstream/123456789/2402/1/Saudi%20Arabia%20and%20the%20Internet%20Technology.pdf>
- Mohamed, A. A. A. (2011). Online privacy concerns among social networks' users. *Cross-Cultural Communication*, 6(4), 74-89.
- Molyneaux, H., O'Donnell, S., Gibson, K., & Singer, J. (2008). Exploring the gender divide on YouTube: An analysis of the creation and reception of blogs. *American Communication Journal*, 10(2), 1-14.
- Morrell, C., Waugh, B., Obeidat, R., Hafkin, N., Ramilo, C. G., Salas, M., ... Nafti, H. (2007). Women & ICT: Education and employment issues and opportunities in developing countries. In Shrum, Wesley et al. (eds.) past, present & future of research in the information society. *Past, present and future of research in the information society* (pp. 135-157). New York: Springer.
- Mori, I. (2007). Student Expectations Study: Key Findings from Online Research and Discussion Evenings Held in June 2007 for the Joint Information Systems Committee. London: Joint Information Systems Committee.  
Retrieved from  
<http://www.jisc.ac.uk/media/documents/publications/studentexpectations.pdf>

- Morris, R. D. (2011). Web 3.0: Implications for online learning. *TechTrends*, 55(1), 42-46.
- Mott, J. (2010). Envisioning the post-LMS era: The open learning network. *Educause Quarterly*, 33(1), 1-9.
- Mullen, R., & Wedwick, L. (2008). Avoiding the digital abyss: Getting started in the classroom with YouTube, digital stories, and blogs. *Clearing House*, 82(2), 66-69. doi:10.3200/TCHS.82.2.66-69
- Mungania, P. (2003). *The seven e-learning barriers facing employees* (Technical reported). New York: The MASIE Center, University of Louisville. Retrieved from <http://www.tjaylor.net/research/The-Seven-E-Learning-Barriers-facing-Employees-Penina-Mungania-2003.pdf>
- Munoz, C., & Towner, T. (2009). Opening facebook: How to use facebook in the college classroom. In I. Gibson et al. (Eds.), *Proceedings of society for information technology & teacher education international conference 2009* (pp. 2623–2627). Chesapeake, VA: AACE. Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Opening+Facebook:+How+to+Use+Facebook+in>
- Murugesan, S. (2007). Understanding Web 2.0. *IT Professional*, 9(4), 34-41. doi:10.1109/MITP.2007.78
- Naik, U., & Shivalingaiah, D. (2008). Comparative study of Web 1.0, Web 2.0 and Web 3.0. *International CALIBER-2008, University of Allahabad, Allahabad*, 499-507. Retrieved from <http://ir.inflibnet.ac.in/bitstream/1944/1285/1/54.pdf>
- Naqvi, S. (2006). Impact of WebCT on learning: An Oman experience. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, 2(4). Retrieved from <http://ijedict.dec.uwi.edu/viewarticle.php?id=220&layout=html>
- O'Murchu, I., Breslin, J. G., & Decker, S. (2004, August). *Online Social and Business Networking Communities*. In ECAI Workshop on Application of Semantic Web Technologies to Web Communities (Vol. 107). Valencia, Spain: CEUR.
- O'Reilly, T. (2007). What is Web 2.0: Design patterns and business models for the next generation of software. *Communications & strategies*, (65), 17-37.
- Ohler, J. (2008). The semantic web in education. *Educause Quarterly*, 31(4), 7-9.

- Olsen, W. (2004). Triangulation in social research: Qualitative and quantitative methods can really be mixed. In Holborn, M.; Haralambos, M. (Eds.), *Developments in Sociology* (pp. 103-118). Ormskirk: Causeway Press.
- Oman Census Administration (2012). *Distribution of population (Omani/expatriate) by governorate/region (2010), census report*. Retrieved [http://www.ncsi.gov.om/NCSI\\_website/documents/Census\\_2010.pdf](http://www.ncsi.gov.om/NCSI_website/documents/Census_2010.pdf)
- Ono, H., & Zavodny, M. (2009). Gender and the Internet. *Social Science Quarterly*, 84(1), 111-121.
- Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 7(4), 1-10
- Ophus, J. D., & Abbitt, J. T. (2009). Exploring the potential perceptions of social networking systems in university courses. *Journal of Online Learning and Teaching*, 5(4). Retrieved from [http://jolt.merlot.org/vol5no4/ophus\\_1209.htm](http://jolt.merlot.org/vol5no4/ophus_1209.htm).
- Pan, T. J., Zheng, L. N., Zhang, H. J., Fang, C. B., Lou, J., & Shao, Z. (2009). Combining web services toward innovative design of agile virtual enterprise supported by web 3.0. *Wseas Transactions on Communications*, 8(1), 81-91. Retrieved from <http://www.wseas.us/e-library/transactions/communications/2009/31-873.pdf>
- Parise, S., & Guinan, P. J. (2008). Marketing using Web 2.0. In *HICSS '08: Proceedings of the 41st Annual Hawaii International Conference on System Sciences* (pp. 281). Washington D.C.: IEEE Computer Society.
- Parker, K. R., & Chao, J. T. (2007). Wikis as a teaching tool. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3, 1-17.
- Partridge, H., Lee, J., & Munro, C. (2010). Becoming "Librarian 2.0": The skills, knowledge, and attributes required by library and information science professionals in a Web 2.0 world (and beyond). *Library Trends*, 59(1/2), 315-335. doi.org/10.1353/lib.2010.0029
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- Pedersen, S., & Macafee, C. (2007). Gender differences in British blogging. *Journal of Computer-Mediated Communication*, 12(4), 1472-1492.

- Peluchette, J., & Karl, K. (2008). Social networking profiles: An examination of student attitudes regarding use and appropriateness of content. *CyberPsychology & Behavior, 11*(1), 95-97. doi:10.1089/cpb.2007.9927
- Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology, 30*(3), 227-238.
- Peterson, E. (2009). Using a wiki to enhance cooperative learning in a real analysis course. *Primus, 19*(1), 18-28. doi:10.1080/10511970802475132
- Philbrick, J. L., Cleveland, A. D., & Pan, X. D. (2009). Positioning medical libraries in the world of Web 2.0 technologies. In *Positioning the Profession: the Tenth International Congress on Medical Librarianship, August 31-September 4, 2009*. (pp. 1-12). Brisbane, Australia: medical library group of southern california and arizona. Retrieved from [http://espace.library.uq.edu.au/eserv/UQ:179801/Web2.0Technologies\\_PhilbrickClevelandPan.pdf](http://espace.library.uq.edu.au/eserv/UQ:179801/Web2.0Technologies_PhilbrickClevelandPan.pdf)
- Popescu, E. (2010). Students' acceptance of Web 2.0 technologies in higher education: Findings from a survey in a Romanian university. In: *Workshops on Database and Expert Systems Applications (DEXA)* (pp. 92-96). IEEE Computer Society. doi: 10.1109/DEXA.2010.38
- Pradhan, D., & Panighahi, P. (2010). *Library 2.0 emerging as the new generation interactive library service*. Retrieved from <http://ir.inflibnet.ac.in/bitstream/handle/1944/986/46.pdf?sequence=1>
- Procter, R., Williams, R., Stewart, J., Poschen, M., Snee, H., Voss, A., & Asgari-Targhi, M. (2010). Adoption and use of Web 2.0 in scholarly communications. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 368*(1926), 4039-4056.
- Purcell, K. (2011). Search and email still top the list of most popular online activities. *Pew Internet & American Life Project, 9*. Retrieved from [http://www.pewinternet.org/~media/files/reports/2011/pip\\_search-and-email.pdf](http://www.pewinternet.org/~media/files/reports/2011/pip_search-and-email.pdf)
- Rabah, S. (2010). Social networking platforms as a virtual public sphere in the Arab world. *Global Media Journal, 2*(1-2), 47-62. Retrieved from [348](http://www.gmj-</a></p>
</div>
<div data-bbox=)



me.com/gmj\_custom\_files/volume2\_issue1\_issue2/articles\_in\_english/volume2-issue1-issue2-article-47-62.pdf

- Rassekh, S. (2004). *Education as a motor for development: Recent education reforms in Oman with particular reference to the status of women and girls*. Geneva, Switzerland: International Bureau of Education. Retrieved from <http://www.ibe.unesco.org/publications/innoata/inno15.pdf>
- Ray, B. B., & Hocutt, M. M. (2006). Teacher-created, teacher-centered weblogs: Perceptions and practices. *Journal of Computing in Teacher Education*, 23(1), 11-18.
- Richardson, W. (2009). Becoming network wise: Schools can do a far better job of preparing students for their connected futures online. *Educational Leadership*, 66(6), 26-31.
- Ricigliano, L., & Houston, R. (2003, April). *Men's work, women's work: The social shaping of technology in academic libraries*. Paper presented at the Association of College and Research Libraries 11th Annual National Conference, Charlotte, N.C., Apr. 10–13, 2003). Retrieved from <http://www.ala.org/acrl/sites/ala.org/acrl/files/content/conferences/pdf/ricigliano.PDF>
- Riegner, C. (2007). Word of mouth on the Web: The impact of Web 2.0 on consumer purchase decisions. *Journal of Advertising Research*, 47(4), 436-447.
- Rinnawi, K. (2002). The Internet and the Arab world as a virtual public sphere. *Socioeconomic Issues*, 16-17, 1-23. Retrieved from <http://cmsprod.bgu.ac.il/NR/rdonlyres/E1D4CA76-9BEF-49A3-8B70-ADF2B3AF68FB/12231/Rinnawi.pdf>
- Risjord, M., Moloney, M., & Dunbar, S. (2001). Methodological triangulation in nursing research. *Philosophy of the Social Sciences*, 31, 40-59. Retrieved from <http://pos.sagepub.com/content/31/1/40.short>
- Roblyer, M. D., McDaniel, M., Webb, M., Herman, J., & Witty, J. V. (2010). Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites. *Internet and Higher Education*, 13(3), 134-140.

- Rollett, H., Lux, M., Strohmaier, M., & Dosinger, G. (2007). The Web 2.0 way of learning with technologies. *International Journal of Learning Technology*, 3(1), 87-107.
- Romani, V. (2009). *The politics of higher education in the Middle East: Problems and prospects* (Middle East Brief No. 36). Waltham, MA: Crown Center for Middle East Studies, Brandeis University.
- Sanchez-Franco, M. J. (2010). WebCT: The quasimoderating effect of perceived affective quality on an extending technology acceptance model. *Computers & Education*, 54(1), 37-46. doi:10.1016/j.compedu.2009.07.005
- Sandars, J., & Schroter, S. (2007). Web 2.0 technologies for undergraduate and postgraduate medical education: an online survey. *Postgraduate medical journal*, 83(986), 759-762. doi:10.1136/pgmj.2007.063123
- Sandars, J., Homer, M., Pell, G., & Croker, T. (2008). Web 2.0 and social software: The medical student way of e-learning. *Medical Teacher*, 30(3), 308-312. doi:10.1080/01421590701798729
- Sarrafzadeh, M., Hazeri, A., & Alavi, S. (2010). The status of Web 2.0 in Iran's LIS education. *Education for Information*, 28(2), 233-245. doi:10.3233/EFI-2010-0905
- Schamber, L. (2000). Time-line interviews and inductive content analysis: Their effectiveness for exploring cognitive behaviors. *Journal of the American Society for Information Science*, 51(8), 734-744.
- Schoepp, K. (2005). Barriers to integration in a technology rich environment. *Learning and Teaching in Higher Education: Gulf Perspective*, 2(1), 1-24. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.87.5771&rep=rep1&type=pdf>
- Sclater, N. (2008). Web 2.0, personal learning environments, and the future of learning management systems. *Research Bulletin*, 13, 2008-2009.
- Seager, S. (2011, May 26). Re: What is web 3.0? Part 1: syntax, semantics & a sticky analogy [Online forum comment]. Retrieved from <http://www.steveseager.com/what-is-web-3-0-syntax-semantics-analogy/>
- Sendall, P., Ceccucci, W., & Peslak, A. (2008). Web 2.0 matters: An analysis of implementing Web 2.0 in the classroom. *Information Systems Education*

- Journals*, 6(64), 1-17. Retrieved from  
[http://www.isedj.org/6/64/ISEDJ.6\(64\).Sendall.pdf](http://www.isedj.org/6/64/ISEDJ.6(64).Sendall.pdf)
- Shafique, F., Anwar, M., & Bushra, M. (2010). Exploitation of social media among university students: A case study. *Webology*, 7(2), 1-13.
- Shaohua, H., & Peilin, W. (2008). Web 2.0 and social learning in a digital economy. In *Knowledge Acquisition and Modeling Workshop, 2008. KAM Workshop 2008. IEEE International Symposium on* (pp. 1121-1124). Wuhan, China: IEEE. doi: 10.1109/KAMW.2008.4810691
- Sharif, A. A., & Al-Kandari, A. A. (2010). The use of online bulletin boards by females in the Gulf Cooperation Council Countries. *Telematics and Informatics*, 27(1), 42-50. Retrieved from  
<http://www.sciencedirect.com/science/article/pii/S073658530900015X>
- Sheikh Mohammed (2011). *Gulf countries*. Retrieved from  
<http://www.sheikhmohammed.co.ae/vgn-ext-templating/v/index.jsp?vgnextoid=b10a4c8631cb4110VgnVCM100000b0140a0aRCRD>
- Sheldon, P. (2009). Maintain or develop new relationships? Gender differences in Facebook use. *Rocky Mountain Communication Review*, 6, 51-56. Retrieved from  
[https://www.humis.utah.edu/humis/docs/organization\\_951\\_1251746183.pdf#page=51](https://www.humis.utah.edu/humis/docs/organization_951_1251746183.pdf#page=51)
- Shen, K. N., & Khalifa, M. (2010). Facebook usage among Arabic college students: Preliminary findings on gender differences. *International Journal of e-Business Management*, 4(1), 53-65.
- Shih, C., & Waugh, M. (2011). Web 2.0 tools for learning in higher education: The presence of blogs, wikis, podcasts, microblogs, Facebook and Ning. In M. Koehler & P. Mishra (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2011* (pp. 3345-3352). Chesapeake, VA: AACE.
- Shihab, M. M. (2009). Web 2.0 tools improve teaching and collaboration in high school English language classes. (Doctoral Dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3344829)
- Silva, J. M., Mahfujur Rahman, A. S. M., & El Saddik, A. (2008, October). Web 3.0: A vision for bridging the gap between real and virtual. In *Proceedings of*

- the 1st ACM International Workshop on Communicability Design and Evaluation in Cultural and Ecological Multimedia System* (pp. 9-14). New York, NY: ACM. doi:10.1145/1462039.1462042
- Smith, M. K., Welty, C., & McGuinness, D. (2004). *OWL web ontology language guide, W3C, recommendation*. Retrieved from <http://www.w3.org/TR/owl-guide/>
- Snelson, C. (2011). YouTube across the disciplines: A review of the literature. *MERLOT Journal of Online Learning and Teaching*, 7(1), 159-170.
- Sonntag, D., Deru, M., & Bergweiler, S. (2009). Design and implementation of combined mobile and touchscreen-based multimodal web 3.0 interfaces. In *Proceedings of the International Conference on Artificial Intelligence (ICAI)* (pp. 974-979). Saarbruecken, Saarland: German Research Center for AI (DFKI). Retrieved from <http://www.joint-research.org/wp-content/uploads/2011/07/icai-09.pdf>
- Sørensen, K. H. (1992). Towards a feminized technology? Gendered values in the construction of technology. *Social Studies of Science*, 22(1), 5-31. Retrieved from [http://scholarworks.boisestate.edu/edtech\\_facpubs/11/](http://scholarworks.boisestate.edu/edtech_facpubs/11/)
- Soumplis, A., Koulocheri, E., Kostaras, N., Karousos, N., & Xenos, M. (2011). Learning management systems and Learning 2.0. *International Journal of Web-Based Learning and Teaching*, 6(4), 1-18.  
doi:10.4018/jwlts.2011100101
- Srivastava, R. (2009, February). *Web 2.0 in LIS curriculum: A preliminary study*. Paper presented at the 7th International CALIBER, Pondicherry University, Puducherry, February 25-27, 2009, Ahmedabad: INFLIBNET Centre.  
Retrieved from <http://ir.inflibnet.ac.in/bitstream/1944/1056/1/47.pdf>
- Steel, C., & Levy, M. (2009). Creativity and constraint: Understanding teacher beliefs and the use of LMS technologies. In R. Atkinson & C. McBeath (Eds.), *same places, different spaces: Proceedings of ascilite Auckland 2009. 26th Annual ascilite International Conference, Auckland, New Zealand* (pp. 1013–1022), Auckland. Retrieved from <http://www.ascilite.org.au/conferences/auckland09/procs/>
- Stern, L. A., & Taylor, K. (2007). Social networking on Facebook. *Journal of the Communication, Speech & Theatre Association of North Dakota*, 20, 9-20.

- Stewart, P. (2009). Web 2.0: Knowledge and use by a select group of teacher-librarians in Jamaica. *IASL 38th Annual Conference, School Libraries in the Picture: Preparing Pupils and Students for the Future, Italy*. Retrieved from <http://iasl2009.istruzione.unipd.it/index.php/lang-it/abstract/101-palette-stewart-web-20-knowledge-and-use-by-a-select-group-of-teacher-librarians-in-jamaica.html>
- Stutzman, F., Gross, R., & Acquisti, A. (2013). Silent listeners: The evolution of privacy and disclosure on Facebook. *Journal of Privacy and Confidentiality*, 4(2), 2. Retrieved from [http://repository.cmu.edu/jpc/vol4/iss2/2/?utm\\_source=CyberWatch&utm\\_campaign=fb2f9f3c2d-SocialMedia\\_CyberWatch\\_March\\_2013&utm\\_medium=email](http://repository.cmu.edu/jpc/vol4/iss2/2/?utm_source=CyberWatch&utm_campaign=fb2f9f3c2d-SocialMedia_CyberWatch_March_2013&utm_medium=email)
- Sultan Qaboos University (2012). *Sultan Qaboos University*. Retrieved from [www.squ.edu.om](http://www.squ.edu.om)
- Sultan Qaboos University (2013). *Department of Information Studies*. Retrieved from <http://www.squ.edu.om/arts-college/tabid/3845/language/en-US/Default.aspx>
- Surry, D. W., Grubb, A. G., Ensminger, D. C., & Ouimette, J. (2009). Implementation of web-based learning in colleges of education: Barriers and enablers. *Canadian Journal of Learning and Technology/La revue canadienne de l'apprentissage et de la technologie*, 35(3), 1-18.
- Sykes, J. M., Oskoz, A., & Thorne, S. L. (2008). Web 2.0, synthetic immersive environments, and mobile resources for language education. *Calico Journal*, 25(3), 528-546.
- Tatarchevskiy, T. (2011). The 'popular' culture of Internet activism. *New Media and Society*, 13(2), 297-313. doi:10.1177/1461444810372785
- Tekinarslan, E. (2008). Blogs: A qualitative investigation into an instructor and undergraduate students' experiences. *Australasian Journal of Educational Technology*, 24(4), 402-412.
- Teo, T. (2008). Pre-service teachers' attitudes towards computer use: A Singapore survey. *Australasian Journal of Educational Technology*, 24(4), 413-424.
- Terrell, J., Richardson, J., & Hamilton, M. (2011). Using Web 2.0 to teach Web 2.0: A case study in aligning teaching, learning and assessment with professional practice. *Australasian Journal of Educational Technology*, 27(5), 846-862.

- Thelwall, M. (2008). Social networks, gender, and friending: An analysis of Myspace member profiles. *Journal of the American Society for Information Science and Technology*, 59(8), 1321-1330. doi:10.1002/asi.20835
- Thompson, A. (2012). *To post or not to post: An examination of gender differences in undergraduates' self-disclosure on Facebook* (Master's thesis, Liberty University). Retrieved from <http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1218&context=masters>
- Thompson, J. (2007). Is education 1.0 ready for Web 2.0 students? *Innovate Journal of Online Education*, 3(4), 6.
- Thurmond, V. A. (2001). The point of triangulation. *Journal of Nursing Scholarship*, 33(3), 253-258.
- Tötteraman, A., & Widen-Wulff, G. (2009, March). *Web 2.0 and collaborative knowledge in the university context*. Paper presented at IX Congress, International Society for Knowledge Organization: Isko, Spain (pp. 786-793).
- Tredinnick, L. (2006). Web 2.0 and business: A pointer to the intranets of the future? *Business Information Review*, 23, 228-234. doi:10.1177/0266382106072239
- Tubaishat, A., Bhatti, A., & El-Qawasmeh, E. (2006). ICT experiences in two different Middle Eastern universities. *Issues in Informing Science & Information Technology*, 3, 667-679.
- Twitter (2013). *About Twitter*. Retrieved from <https://about.twitter.com/>
- Tyagi, S. (2012). Adoption of Web 2.0 technology in higher education: A case study of universities in the National Capital Region, India. *International Journal of Education and Development using ICT*, 8(2), 28-43.
- Ullrich, C., Borau, K., Luo, H., Tan, X., Shen, L., & Shen, R. (2008). Why web 2.0 is good for learning and for research: Principles and prototypes. In *Proceedings of the 17th international Conference on World Wide Web* (pp. 705-714). New York, NY: ACM. doi:10.1145/1367497.1367593
- Union, G. (2011). *The use of Web 2.0 technology to help students in high school overcome ethnocentrism: A cross-cultural case study* (Doctoral dissertation). Available from ProQuest Dissertation and Theses database. (AAT No. 3449815)

- United Nations Development Programme. Regional Bureau for Arab States. (2005). *Arab human development report 2005: Towards the rise of women in the Arab world*. New York: United Nations Publications.
- United Nations Economic and Social Commission for Western Asia. (2013). *Competitiveness of the ICT sector in the Arab region: Innovation and investment imperatives*. Retrieved from [http://www.escwa.un.org/information/publications/edit/upload/E\\_ESCWA\\_ICTD\\_13\\_4\\_E.pdf](http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA_ICTD_13_4_E.pdf)
- Uys, P, Dalgarno, B., Carlson, L., Crampton, A., & Tinkler, J. (2011). A 2010 snapshot of educational technology use by teaching staff of Charles Sturt University. In G. Williams, P. Statham, N. Brown, & B. Cleland (Eds.), *Changing Demands, Changing Directions. Proceedings Ascilite Hobart 2011* (pp. 1255-1269). Retrieved from <http://www.leishman-associates.com.au/ascilite2011/downloads/papers/Uys-full.pdf>
- Valenzuela, D., & Shrivastava, P. (2002). *Interview as a method for qualitative research*. Retrieved from <http://www.public.asu.edu/~kroel/www500/Interview%20Fri.pdf>
- Valenzuela, S., Park, N., & Kee, K. F. (2009). Is there social capital in a social network site? Facebook use, and college students' life satisfaction, trust, and participation. *Journal of Computer Mediated Communication, 14*(4), 875-901. doi:10.1111/j.1083-6101.2009.01474.x ; E-ISSN: 1083-6101
- Virkus, S. (2008). Use of Web 2.0 technologies in LIS education: Experiences at Tallinn University. *Estonia. Electronic Library and Information Systems, 42*(3), 262-274. doi:10.1108/00330330810892677
- Virkus, S., & Bamigbola, A. A. (2011). Students' conceptions and experiences of Web 2.0 tools. *New Library World, 112*(11), 479-489. doi:10.1108/03074801111190473
- Vrazalic, L., MacGregor, R., Behl, D., & Fitzgerald, J. (2010). E-learning barriers in the United Arab Emirates: Preliminary results from an empirical investigation. *IBIMA Business Review, 4*, 1-7. doi:10.5171/2010.458727
- Warf, B., & Vincent, P. (2007). Multiple geographies of the Arab Internet. *Area, 39*(1), 83-96.

- Wasserman, I. M., & Richmond-Abbott, M. (2005). Gender and the Internet: Causes of variation in access, level, and scope of use. *Social Science Quarterly*, 86(1), 252-270.
- Way, J. (2008). Practical applications of Web 2.0. *Journal for the School Information Professional*, 12(1), 8-13.
- Weber, A., (2011). Arabic speakers' use of English language course management systems: A case study. *Learning and Teaching in Higher Education: Gulf Perspectives*, 8(1).
- West, R. E., Waddoups, G., & Graham, C. R. (2007). Understanding the experiences of instructors as they adopt a course management system. *Educational Technology Research & Development*, 55(1), 1-26. doi:10.1007/s11423-006-9018
- Wikipedia (2012). *Wikipedia statistics*. Retrieved from <http://en.wikipedia.org/wiki/Wikipedia:Statistics>
- Williams, R., & Edge, D. (1996). The social shaping of technology. *Research Policy*, 25(6), 856-899.
- Wirtz, B. W., Schilke, O., & Ullrich, S. (2010). Strategic development of business models: Implications of the Web 2.0 for creating value on the Internet. *Long Range Planning*, 43(2-3), 272-290. doi:10.1016/j.lrp.2010.01.005
- Wise, L., Skues, J., & Williams, B. (2011, December). *Facebook in higher education promotes social but not academic engagement*. Paper presented at the 28th Australasian Society for Computers in Learning in Tertiary Education Conference, Hobart, Australia. Retrieved from <http://www.ascilite.org.au/conferences/hobart11/downloads/papers/Wise-full.pdf>
- Wolf, K. (2010). Bridging the distance: The use of blogs as reflective learning tools for placement students. *Higher Education Research & Development*, 29(5), 589-602. doi:10.1080/07294360.2010.502292 ; E-ISSN: 1469-8366
- Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*, 10(3). doi:10.1111/j.1083-6101.2005.tb00259.x



Xu, C., Ouyang, F., & Chu, H. (2009). The academic library meets Web 2.0: Applications and implications. *Journal of Academic Librarianship*, 35(4), 324-331.

Yin, R. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage Publishing.

YouTube (2012). *Statistics*. Retrieved from <http://www.youtube.com/yt/press/statistics.html>

Zimmer, M. (2009). Renvois of the past, present and future: Hyperlinks and the structuring of knowledge from the Encyclopédie to Web 2.0. *New Media & Society*, 11, 95-113. doi:10.1177/1461444808099573

***"Every reasonable effort has been made to acknowledge the owners of copyright material. I would be pleased to hear from any copyright owner who has been omitted or incorrectly acknowledged."***

## **A. Questionnaire (English Version)**

### **Survey (English version)**

#### **Online Tools in Teaching and Learning and the Problem of ‘Web 2.0’: A Case Study of an Information Studies Department, Oman**

This research study is being conducted by Salim S. Al Kindi, a PhD student in the Department of Internet Studies, Curtin University, under the primary supervision of Professor Matthew Allen, investigates the use and adopt of online tools or so-called Web 2.0 at Department of Information Studies in Sultan Qaboos University.

You are kindly requested to participate in the following questionnaire. By clicking on the link, you agree to participate in the survey and for data to be collected. Most of the questions will just require you to tick a box in response. Your participation is entirely voluntary and will remain entirely anonymous and confidential. Your contribution towards this research will be most valuable for this research and thus will be highly appreciated. You have the right if you decide not to take part or to stop taking part in this study anytime. Refusal to participate in this study will in no way affect in your academic studies.

This survey has received the approval of Human Research and Ethics Committee (HREC) of Curtin University, Australia (Approval number is MCCA-01-12). Researcher and supervisor only will have access to the collected data. It is estimated that the survey will take approximately 15-25 minutes to complete.

Thank you very much for your cooperation

Researcher: Salim Said Al kindi,  
School of Media, Culture and Creative Arts  
Department of Internet Studies  
Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om.  
Tel: +61 431550087 (Australia), Tel: +968 99050367 (Oman)

## A. DEMOGRAPHIC AND BACKGROUND

### 1. DEMOGRAPHIC INFORMATION

**A 1. Gender** (Please tick as applicable )

What is your gender? <sub>1</sub> Male <sub>2</sub> Female

**A 2. Academic Degree** (Please tick as applicable )

In which program are you enrolled? <sub>1</sub> Bachelor <sub>2</sub> Master <sub>3</sub> Higher Diploma in Medical Librarianship <sub>4</sub> PhD

**A 3. Academic year** (Please tick as applicable )

In which year did you join the Information Studies Department? <sub>1</sub>2012/13 <sub>2</sub> 2011/12 <sub>3</sub> 2010/11 <sub>4</sub>2009/10 <sub>5</sub>2008/09 <sub>6</sub> 2007/08  other please specify.....

**A 4. Province** (Please tick as applicable )

Which Province are you from? <sub>1</sub>Ad Dakhiliyah <sub>2</sub>Ad Dhahirah <sub>3</sub>Al Batinah North <sub>4</sub>Al Batinah South <sub>5</sub>Al Buraimi <sub>6</sub>Al Wusta <sub>7</sub>Ash Sharqiyah North <sub>8</sub>Ash Sharqiyah South <sub>9</sub>Dhofar <sub>10</sub>Mascot <sub>11</sub>Musandam <sub>12</sub> other please specify.....

### 2. INTERNET USE

**A 5. How would you classify your internet skills?** (Please tick as applicable )

<sub>1</sub> Very Poor <sub>2</sub> Poor <sub>3</sub> Average <sub>4</sub> Good <sub>5</sub> Excellent

**A 6. When did you first start using the internet?**

<sub>1</sub> Before 1998 <sub>2</sub> 1998 <sub>3</sub> 1999 <sub>4</sub> 2000 <sub>5</sub> 2001 <sub>6</sub>2002 <sub>7</sub> 2003 <sub>8</sub> 2004 <sub>9</sub> 2005 <sub>10</sub> 2006 <sub>11</sub> 2007 <sub>12</sub>2008 <sub>13</sub> 2009 <sub>14</sub> 2010 <sub>15</sub> 2011 <sub>16</sub> 2012

**A 7. Please estimate how many hours a week you are on the internet?** (Please tick as applicable )

- <sub>1</sub> 0 to 10 hours a week
- <sub>2</sub> 11 to 15 hours a week
- <sub>3</sub> 16 to 20 hours a week
- <sub>4</sub> More than 20 hours a week

**A 8. Please indicate how often do you use the internet with the following technologies devices? Please use a scale 1-4 where: 1 = “Occasionally”, 2 = “Sometimes”, 3 = “Often” and 4 = “Very Often”. Please use 0 if you have never use it**

0= “Never”, 1 = “Occasionally”, 2 = “Sometimes”, 3 = “Often” and 4 = “Very Often”

1. Tablet device (e.g., iPad, Xoom, Galaxy Tab, Galyaxy note, etc.)	0	1	2	3	4
2. Smart phones (e.g., iPhone, Blackberry, Galaxy, Droid phone, etc.)	0	1	2	3	4
3. Personal desktop computer or laptop computer	0	1	2	3	4
4. Mini-laptop, Netbook, or handheld computer	0	1	2	3	4

**A 9. Please indicate which of the following statements describe the main way you access the internet?** (tick only the one that applies best)

- <sub>1</sub> Using either your desktop computer or laptop computer with an Asymmetric Digital Subscriber Line (ADSL) internet connection.
- <sub>2</sub> Using either your desktop computer or laptop computer with (dial up) internet connection
- <sub>3</sub> Using your mobile phone or a tablet device with (Wi-Fi over ADSL) internet connection.
- <sub>4</sub> Using your laptop computer with a mobile internet connection
- <sub>5</sub> Using your mobile phone or a tablet device with a mobile internet connection
- <sub>6</sub> None of them

**A 10. Please indicate which of the following statements best describe where your most frequently access the internet.**

- <sub>1</sub> I access the internet at my place of work
- <sub>2</sub> I access the internet at my place of education (the university)
- <sub>3</sub> I access the internet at my home/accommodation
- <sub>4</sub> I access the internet at a free public location (library, etc.)
- <sub>5</sub> I access the internet at a paid public location (cybercafé)
- <sub>6</sub> Other please specify.....

### 3. LEARNING MANAGEMENT SYSTEM USE

**A 11. Have you taken a class that used a Learning Management System (such as WebCT, Blackboard or Moodle)?**

- <sub>1</sub> No (Go to section B)
- <sub>2</sub> Yes (Please answer questions A 12 and A 13 and then go to section B)

**A 12. On a scale of 1 to 5 how would you describe your skill regarding following activities using a Learning Management System (such as WebCT, Blackboard or Moodle) where 1 is “Very Poor”, 2 is “Poor”, 3 is “Average”, 4 is “Good” and 5 is “Excellent”**

	Very Poor	←————→	Excellent
1. Collaborating with students	1	2 3 4	5
2. Regularly engaging with studies	1	2 3 4	5
3. Engaging in discussions (through posting and reading)	1	2 3 4	5
4. Doing quizzes	1	2 3 4	5
5. Communicating with students	1	2 3 4	5
6. Accessing course/subject materials	1	2 3 4	5
7. Accessing external links & resources (outside LMS)	1	2 3 4	5
8. Having a sense of community with other students	1	2 3 4	5

**A 13. So, how would you describe your own overall skill using a Learning Management System (such as WebCT, Blackboard or Moodle)? Please use a scale of 1 to 5 where 1 is “Very Poor”, 2 is “Poor”, 3 is “Average”, 4 is “Good” and 5 is “Excellent” Please use 0 if you have no opinion.**

Overall skill in using LMS	0	1	2	3	4	5
----------------------------	---	---	---	---	---	---

### B. THE CONTEXT OF INTERNET APPLICATIONS AND TOOLS

**B 1. Are you aware of the term Web 2.0? (Please tick as applicable) √**

- <sub>1</sub> No (Go to question B 3)
- <sub>2</sub> Yes (Please answer question B 2 and then go to question B 3)

**B 2. On a scale of 1 to 5, with one being extremely descriptive words and 5 being extremely non-descriptive words please indicate which of the following characteristics best describe Web 2.0. Please use 0 if you have no opinion**

<i>Descriptive Words of Web 2.0</i>						
1. Ease of use	0	1	2	3	4	5
2. More active participation in the Web	0	1	2	3	4	5
3. Ability to create and update content	0	1	2	3	4	5
4. Ability to share information	0	1	2	3	4	5
5. Remixing or mashups of information	0	1	2	3	4	5
6. Transparency	0	1	2	3	4	5
7. The web as platform for services	0	1	2	3	4	5
8. Collaboration	0	1	2	3	4	5
9. Communication	0	1	2	3	4	5
10. Social software	0	1	2	3	4	5
11. Social networks	0	1	2	3	4	5
12. Collective intelligence	0	1	2	3	4	5
13. Freedom	0	1	2	3	4	5

**B 3. On a scale of 1 to 5, please indicate your level of knowledge/practices of following internet activities/online activities where 1 is “not heard of it”, 2 is “know about it but don’t do it”, 3 is “have done it but don’t anymore”, 4 is “do it, but it is not a major aspect of my internet use” and 5 is “do it, and it is a major part of using the internet”.**

<i>Internet Activities/Online Activities</i>						
1. Blogging (writing a blog, not just reading them)	1	2	3	4	5	
2. Using a social networking	1	2	3	4	5	
3. Uploading/managing photos online	1	2	3	4	5	
4. Document sharing (e.g., SlideShare.net)	1	2	3	4	5	
5. Online Video (e.g., YouTube includes watching and sharing video)	1	2	3	4	5	
6. Social Bookmarking (e.g., Delicious)	1	2	3	4	5	
7. Creating or writing in a wiki	1	2	3	4	5	
8. Listening to Podcasts	1	2	3	4	5	
9. RSS really Simple Syndications (syndication of content)	1	2	3	4	5	
10. Using discussion forums (not in an LMS)	1	2	3	4	5	

**B 4. On a scale of 1 to 5, please indicate your level of knowledge of following internet applications/online tools where 1 is “not heard of it”, 2 is “know about it but don’t do it”, 3 is “have done it but don’t anymore”, 4 is “do it, but it is not a major aspect of my internet use” and 5 is “do it, and it is a major part of using the internet”**

<i>Internet Applications/Online Tools</i>						
1. Facebook	1	2	3	4	5	
2. Twitter	1	2	3	4	5	
3. Wikipedia	1	2	3	4	5	
4. Google. Docs	1	2	3	4	5	
5. LinkedIn	1	2	3	4	5	
6. Academia.edu	1	2	3	4	5	
7. YouTube	1	2	3	4	5	

**B 5. How often do you use the internet for the following *Personal Activities*? Please use a scale 1-4 where: 1 = “Occasionally”, 2 = “Sometimes”, 3 = “Often” and 4 = “Very Often. Please use 0 if you have never use it.**

<i>0= “Never”, 1 = “Occasionally”, 2 = “Sometimes”, 3 = “Often” and 4 = “Very Often</i>	
1. Use the web to browse or search for information (e.g., news and events)	0 1 2 3 4
2. Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	0 1 2 3 4
3. Use the web for instant messaging/chat (e.g., MSN)	0 1 2 3 4
4. Use the internet for social networking (e.g., Facebook and MySpace)	0 1 2 3 4
5. Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	0 1 2 3 4
6. Use the internet for resources making and sharing with others (e.g., Delicious, wikis and blogs)	0 1 2 3 4
7. Use the internet for watching/sharing video (e.g., YouTube)	0 1 2 3 4
8. Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	0 1 2 3 4
9. Use the internet in collaborating in ideas (e.g., wikis and blogs)	0 1 2 3 4
10. Using Facebook to communicate with and collaborate in ideas with others	0 1 2 3 4
11. Using Twitter for finding and following people activities	0 1 2 3 4
12. Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)	0 1 2 3 4

**B 6. How frequently do you practice the following activities on the internet for your *Study and Learning*? Please use a scale 1-4 where: 1 = “Occasionally”, 2 = “Sometimes”, 3 = “Often” and 4 = “Very Often. Please use 0 if you have never use it**

<i>0= “Never”, 1 = “Occasionally”, 2 = “Sometimes”, 3 = “Often” and 4 = “Very Often</i>	
1. Use the web to browse or search for information (e.g., news and events)	0 1 2 3 4
2. Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	0 1 2 3 4
3. Use the web for instant messaging/chat (e.g., MSN)	0 1 2 3 4
4. Use the internet for social networking (e.g., Facebook and MySpace)	0 1 2 3 4
5. Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	0 1 2 3 4
6. Use the internet for resources making and sharing with other (e.g., Delicious, wikis and blogs)	0 1 2 3 4
7. Use the internet for watching/sharing video (e.g., YouTube)	0 1 2 3 4
8. Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	0 1 2 3 4
9. Use the internet in collaborating in ideas (e.g., wikis and blogs)	0 1 2 3 4
10. Using Facebook to communicate with and collaborate in ideas with others	0 1 2 3 4
11. Using Twitter for finding and following people activities	0 1 2 3 4
12. Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)	0 1 2 3 4
13. Use the web to access a portal, learning management system	0 1 2 3 4

## C. INTERNET APPLICATIONS/ONLINE TOOLS FOR LEARNING

**C 1. Please indicate your level of preference for studying in the following situations where 1 = strong preference against and 4 = strong preference in favour. Please use 0 if you have no opinion**

1. I prefer taking classes that involve no formal use of the internet in the classroom (internet as a facilitating tool to courses)	0	1	2	3	4
2. I prefer taking classes that involve some formal use of the internet (e.g., email, browsing and searching) in the classroom	0	1	2	3	4
3. I prefer taking classes that involve use the internet extensively in the classroom (basically depend on the internet via using different types of internet applications)	0	1	2	3	4
4. I prefer taking classes that are delivered entirely “online” with no requirement for face to face interactions	0	1	2	3	4

**C 2. Please indicate which of the following statements best describe your preferred learning style?**

- <sub>1</sub> I prefer to learn by working independently
- <sub>2</sub> I prefer to learn by working in a group rather than independently
- <sub>3</sub> I prefer to learn either by working in a group or independently

**C 3. Please rate Your Agreement with the following statements regarding *your learning LIS course within use various internet applications/online tools*, on a scale of 1 to 5, where: 1 = “Strongly Disagree”, 2 = “Disagree”, 3 = “Neither”, 4 = “Agree”, and 5 = “Strongly Agree”. Please use 0 if you have no opinion**

<i>Internet applications include – anything outside of a Learning Management System such as blogs, wikis, social networking</i>						
Using various internet applications improves my collaboration with others	0	1	2	3	4	5
Using various internet applications makes me competitive in seeking employment	0	1	2	3	4	5
YouTube supports my understanding of LIS field (e.g., information services, information organisations, information management, etc.)	0	1	2	3	4	5
Facebook facilitates my collaboration with others (e.g., Information Professionals/Librarians)	0	1	2	3	4	5
Twitter helps me to collaborate with others by following and finding other people activities (e.g., Information Professionals/Librarians)	0	1	2	3	4	5
LinkedIn and/or Academia.edu enable me to learn more through collaboration with others.	0	1	2	3	4	5
Overall, using various internet applications allows me to prepare myself in future job market.	0	1	2	3	4	5

**C 4. Please rate Your Agreement with the following statements regarding using various internet applications/online tools on the future workplace. Using a scale of 1 to 5, where: 1 = “Strongly Disagree”, 2 = “Disagree”, 3 = “Neither”, 4 = “Agree”, and 5 = “Strongly Agree”. Please use 0 if you have no opinion**

<i>Internet applications include – anything outside of a learning management system such as blogs, wikis, social networking</i>						
Using various internet applications would improve my collaboration with others	0	1	2	3	4	5
Using various internet applications would make me competitive in seeking employment	0	1	2	3	4	5
YouTube would support my understanding of LIS field (e.g., information services, information organisations, etc.)	0	1	2	3	4	5
Facebook would facilitate my collaboration with others (e.g., Information Professionals/Librarians)	0	1	2	3	4	5
Twitter would help me to collaborate with others by following and finding other people activities (e.g., Information Professionals/Librarians)	0	1	2	3	4	5
LinkedIn and/or Academia.edu would enable me to learn more through collaboration with others.	0	1	2	3	4	5
Overall, using various internet applications would allow me to survival in job market.	0	1	2	3	4	5

**C 5. Please rate Your Agreement with the following statements regarding using various internet applications in learning compare to other methods. Using a scale of 1 to 5, where: 1 = “Strongly Disagree”, 2 = “Disagree”, 3 = “Neither”, 4 = “Agree”, and 5 = “Strongly Agree”. Please use 0 if you have no opinion**

<i>Internet applications include – anything outside of a learning management system such as blogs, wikis, social networking</i>						
Using various internet applications allows me to communicate more effectively compared to other methods (e.g., face to face meeting and Learning Management System)	0	1	2	3	4	5
Using various internet applications allows me to collaborate in my course more effectively as compared to other methods (e.g., face to face meeting and Learning Management System)	0	1	2	3	4	5
Using various internet applications improves my participations and contributions in my LIS course as compared to other methods (e.g., face to face meeting and Learning Management System)	0	1	2	3	4	5
Using various internet applications distracts my learning LIS courses.						
I prefer to use various internet applications in my courses rather than other methods (e.g., face to face meeting and Learning Management System)	0	1	2	3	4	5



## D. INCENTIVES AND BARRIERS TO ADOPTION AND INNOVATION OF INTERNET

**D 1. On a scale of 1 to 7, with one being extremely unimportant and 7 being extremely important, please rate how important are the following factors to your use of internet?**

	Extremely unimportant	←→	Extremely important
1. I use the internet to find, maintain, or end relationships.	1	2 3 4	5 6 7
2. Using the internet allows me to collaborate with others	1	2 3 4	5 6 7
3. I use the internet for entertainment	1	2 3 4	5 6 7
4. ICT development in my society force me to use various internet applications	1	2 3 4	5 6 7
5. Using the internet allows me for learning new things	1	2 3 4	5 6 7
6. Most of various internet applications are free	1	2 3 4	5 6 7
7. Most of various internet applications are easy to use	1	2 3 4	5 6 7
8. Most of various internet applications are flexible	1	2 3 4	5 6 7
9. The availability of communication devices such as smart phones.	1	2 3 4	5 6 7

**D 2. On a scale of 1 to 7, with one being extremely unimportant and 7 being extremely important, please rate how important are the following barriers to your use of internet?**

	Extremely unimportant	←→	Extremely important
1. Lack of information technology skills	1	2 3 4	5 6 7
2. Lack of confidence	1	2 3 4	5 6 7
3. Not comfortable with the open and public nature of new technology or Web 2.0 applications	1	2 3 4	5 6 7
4. Internet is slow	1	2 3 4	5 6 7
5. Lack of knowledge	1	2 3 4	5 6 7
6. Lack of time to learn about various internet applications	1	2 3 4	5 6 7
7. Fear of technology	1	2 3 4	5 6 7
8. Language problem	1	2 3 4	5 6 7
9. Lack of encouragement and incentives from the academics staff	1	2 3 4	5 6 7
10. Lack of awareness of benefit of these applications in learning	1	2 3 4	5 6 7
11. Internet policies at the university.	1	2 3 4	5 6 7
12. Internet access policies and regulations which ruled by telecommunications companies	1	2 3 4	5 6 7
13. Internet services are costly	1	2 3 4	5 6 7
14. The absence of government roles in adoption various internet applications in education	1	2 3 4	5 6 7
15. Safety and privacy concerns	1	2 3 4	5 6 7

**End of the Questionnaire, Thank You Very Much For Your Cooperation**

## B. Questionnaire (Arabic Version)

### الاستبانة ( النسخة العربية )

أدوات الإنترنت في التعليم والتعلم واشكالية الويب 2 : دراسة حالة لقسم دراسات المعلومات،  
سلطنة عمان

هذه الاستبانة جزء من متطلبات نيل شهادة الدكتوراه من جامعة كيرتن باستراليا، يهدف من خلالها الباحث في الكشف عن الطريقة التي تشكل من خلالها أدوات الانترنت ومنها تطبيقات الويب 2 من قبل الطلاب في مختلف المجالات مع التركيز على التعليم والتعلم والعوامل التي قد تساهم في هذه العملية.

يجدونا الأمل في أن هذه الدراسة سوف تعطي نتائج مهمة جدا تعم بالفائدة لك ولبقية الطلاب وكذلك الأكاديميين لتبني هذه التقنيات في العملية التعليمية كما قد تساهم الدراسة في خدمة قطاع التعليم بشكل عام في السلطنة وبقية الدول العربية.

يرجى منك التكرم بالمشاركة في الإجابة على الاسئلة التي تطرحها الاستبانة، من خلال النقر على الرابط أدناه، تتطلب معظم الاسئلة فقط وضع علامة أمام الاختيار المناسب. مشاركتكم تعتبر طوعية تماما وسوف تظل المعلومات مجهولة تماما وسرية.

مساهمتك نحو هذا البحث تضيف قيمة لهذا البحث، وبالتالي سوف تكون محل تقدير كبير. لديك الحق إذا قررت عدم المشاركة أو لوقف المشاركة في هذه الدراسة في أي وقت. كما أن رفضك المشاركة في هذه الدراسة بأي طريقة لن تؤثر في دراستك الأكاديمية.

لقد تحصلت هذه الاستبانة على موافقة لجنة أخلاقيات البحث العلمي بجامعة كيرتن، لذلك أضمن لك أن مخرجات هذه الدراسة بما فيها النتائج سوف تحاط بالسرية التامة ولن يحق لأحد سوى الباحث ومشرفيه بالاطلاع عليها. سوف لن يتم نشر أي نتائج من خلالها يمكن التعرف أو الاستدلال على هوية أحد المشاركين في هذه الدراسة.

من المتوقع أن تستهلك الاستبانة من 15 إلى 20 دقيقة من الوقت للإجابة عليها. نشكرك كثيرا على حسن تعاونك معنا..

الباحث: سالم سعيد الكندي  
قسم دراسات الإنترنت بجامعة كيرتن الأسترالية

**Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om.**  
**Tel: +61 431550087 (Australia), Tel: +968 99050367 (Oman)**

## A. البيانات الديموغرافية والمهارات التكنولوجية

### 1. البيانات الديموغرافية

1 A. النوع، الرجاء الإشارة ب  في المكان المناسب

ذكر  أنثى

2 A. في أي من البرامج الدراسية الآتية تدرس حالياً؟ الرجاء الإشارة ب  في المكان المناسب

بكالوريوس  ماجستير  دبلوم مكنتبات طبية  دكتوراه

3 A. في أي سنة دراسية التحقت بالقسم؟ الرجاء الإشارة ب  في المكان المناسب

2007/08  2008/09  2009/10  2010/11  2011/12  2012/13

أخرى، الرجاء ذكرها.....

4 A. من أي محافظة تتحدر؟ الرجاء الإشارة ب  في المكان المناسب

مسقط  الداخلية  الباطنة شمال  الباطنة جنوب  البريمي  الشرقية شمال  الشرقية جنوب

8 الوسطى  9 مسندم  10 ظفار  11 الظاهرة

### 2. استخدام الإنترنت

5 A. ما هو مستوى مهاراتك في استخدام الإنترنت؟ الرجاء الإشارة ب  في المكان المناسب

1 ضعيف جداً  2 ضعيف  3 متوسط  4 جيد  5 جيد جداً

6 A. متى بدأت استخدام الإنترنت لأول مرة؟ الرجاء الإشارة ب  في المكان المناسب

1 before 1998  2 1998  3 1999  4 2000  5 2001  6 2002  7 2003  8 2004

9 2005  10 2006  11 2007  12 2008  13 2009  14 2010  15 2011  16 2012

7 A. يرجى تقدير عدد الساعات التي تستخدم فيها الإنترنت أسبوعياً؟ الرجاء الإشارة ب  في المكان المناسب

1 من 0 إلى 10 ساعات في الأسبوع

2 من 11 إلى 15 ساعة في الأسبوع

3 من 16 إلى 20 ساعة في الأسبوع

4 أكثر من 20 ساعة في الأسبوع

8 A. ما تكرار استخدامك للإنترنت باستخدام الأدوات أو التقنيات الآتية، يرجى اختيار أحد المقاييس أدناه:

=0 لم أستخدم أبداً، =1 نادراً، =2 في بعض الأحيان =3 أحياناً =4 دائماً

=4 دائماً	=3 أحياناً	=2 بعض الأحيان	=1 نادراً	=0 لم أستخدم أبداً،	
<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	1. الأجهزة اللوحية (مثال، أي باد، زوم، جالاكسي تاب، الخ.) Tablet device (e.g., iPad, Xoom, Galaxy Tab, Galyaxy note, etc.)
<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	2. الهواتف الذكية (مثال، أي فون، جلاكسي، بلاك بيري، الخ) Smart phone (e.g., iPhone, Blackberry, Galaxy, Droid phone, etc.)
<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	3. جهاز الحاسب الشخصي أو الجهاز المحمول Personal desktop computer or laptop computer
<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	4. الحواسيب الصغيرة أو حواسيب اليد Mini-laptop, Netbook, or handheld computer

9 A. الرجاء تحديد أي العبارات الآتية تصف طريقة اتصالك الرئيسية بالإنترنت (الرجاء اختيار العبارة المناسبة).

1 باستخدام الحاسوب الثابت أو المحمول متصل بالإنترنت السريع (ADSL)

2 باستخدام الحاسوب الثابت أو المحمول متصل بخط الهاتف (dial up)

3 باستخدام الهاتف المحمول أو الجهاز اللوحي مع خدمة الواي فاي متصل بالإنترنت السريع (ADSL)

4 باستخدام الحاسوب المحمول متصل بالإنترنت عبر الهاتف المحمول

5 باستخدام الهاتف المحمول أو الجهاز اللوحي متصل بالإنترنت عبر الهاتف المحمول.

6 غير ذلك .....

10 A. أي المواقع أو الأماكن تستخدمها معظم الأحيان في الاتصال بالإنترنت؟

- 1 مكان العمل  
2 مكان الدراسة (الجامعة)  
3 البيت أو السكن  
4 المكتبة  
5 مقاهي الإنترنت  
6 أخرى الرجاء ذكرها.....

3. استخدام نظم إدارة التعلم

11 A. هل درست أحد المقررات عن طريق نظم إدارة التعلم مثل الويب ستي WebCT و المودل Moodle ؟

- 1 لا (يرجى الانتقال إلى القسم B)  
2 نعم (يرجى الإجابة على السؤال A 12 و A 13 ثم الانتقال إلى القسم B)

12 A. باستخدام المقاييس من 1 إلى 5 أدناه، كيف يمكن أن تصف مستوى مهاراتك فيما يتعلق بالأنشطة الآتية عند استخدامك نظم إدارة التعلم (مثل الويب ستي WebCT و المودل Moodle)، حيث =1 ضعيف جدا، =2 ضعيف، =3 متوسط، =4 جيد، =5 جيد جدا

المقاييس					النشاط
5 = جيد جدا	4 = جيد	3 = متوسط	2 = ضعيف	1 = ضعيف جدا	
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	1. التعاون مع الطلاب
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	2. الانخراط في الدراسة بشكل مستمر
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	3. الانخراط في المناقشات (من خلال الكتابة والقراءة)
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	4. القيام بالامتحانات القصيرة
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	5. الإتصال بالطلاب
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	6. الوصول إلى مصادر المقرر
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	7. الوصول إلى الروابط والمصادر الخارجية (خارج نظام إدارة التعلم)
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	8. وجود الإحساس بالانتماء للمجتمع مع بقية الطلاب

13 A. باستخدام المقاييس من 1 إلى 5 أدناه، كيف يمكن أن تصف مستوى مهاراتك بشكل عام فيما يتعلق باستخدام نظم إدارة التعلم (مثل الويب ستي WebCT و المودل Moodle)، حيث =0 لا يمكن تحديد ذلك =1 ضعيف جدا، =2 ضعيف، =3 متوسط، =4 جيد، =5 جيد جدا

<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	1. مستوى مهاراتك بشكل عام في استخدام نظم إدارة التعلم (مثل الويب ستي WebCT و المودل Moodle)
----------------------------	----------------------------	----------------------------	----------------------------	----------------------------	----------------------------	---

## B. أدوات/تطبيقات الإنترنت

1 B. هل أنت على دراية بمصطلح الويب 2.0 ؟

- 1 لا (يرجى الانتقال إلى القسم B3)  
2 نعم (يرجى الإجابة على السؤال B2 ثم الانتقال إلى السؤال B3)

2 B. باستخدام المقاييس من 1 إلى 5 أدناه، حيث يشير 1 = عبارات أكثر وصفية في مقابل 5 = عبارات غير وصفية، يرجى تحديد أي من العبارات أو الخصائص الآتية تصف الويب 2.0، الرجاء اختيار 0 إذا لم يكن لديك رأي حول ذلك.

العبارات الوصفية أو الخصائص	عبارات أكثر وصفية	عبارات غير وصفية
1. سهولة الاستخدام	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
2. المشاركة في الويب أكثر فعالية	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
3. القدرة على خلق المحتوى وتحديثه	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
4. القدرة على المشاركة في المعلومات	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
5. تعديل ومزج المعلومات	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
6. الشفافية	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
7. الويب كمنصة للخدمات	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
8. التعاون	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
9. الاتصال	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
10. البرامج الإجتماعية	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
11. الشبكات الإجتماعية	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
12. الذكاء التعاوني	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
13. الحرية	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

B3. باستخدام المقاييس من 1 إلى 5 أدناه، يرجى تحديد مستوى معرفتك أو ممارستك للأنشطة الآتية على الإنترنت.

النشاط	1 = لم أسمع بها	2 = سمعت بها، ولكن لم أستخدمها	3 = قد فعلت ذلك، ولكن ليس بعد	4 = أفعل ذلك، ولكن لا يشكل جزءاً رئيسياً من استخدامي للإنترنت	5 = أفعل ذلك، و يشكل جزءاً رئيسياً من استخدامي للإنترنت
1. التدوين ( الكتابة في المدونات وليس فقط القراء) Blogging	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. استخدام الشبكات الإجتماعية	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. تحميل\ادارة الصور على الخط المباشر	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. التشارك في الملفات (مثال slideshare.net)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. الفيديو على الخط المباشر (YouTube)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6. الارتباطات أو التتبعات الإجتماعية Social Bookmarking (e.g., delicious)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7. انشاء ويكي أو الكتابة بها Creating or writing in a wiki	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
8. الإستماع إلى البودكاست Podcasts	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9. خدمة RSS (خلاصة المحتوى)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
10. استخدام منتديات المناقشة ( ليست ضمن نظم ادارة التعلم)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

B4. باستخدام المقاييس من 1 إلى 5 أدناه، يرجى تحديد مستوى معرفتك بتطبيقات الإنترنت الآتية:

التطبيق	1 = لم أسمع بها	2 = سمعت بها، ولكن لم أستخدمها	3 = قد فعلت ذلك، ولكن ليس بعد	4 = أفعل ذلك، ولكن لا يشكل جزءاً رئيسياً من استخدامي للإنترنت	5 = أفعل ذلك، و يشكل جزءاً رئيسياً من استخدامي للإنترنت
1. الفيس بوك Facebook	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. التويتتر Twitter	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. الويكي ببديا Wikipedia	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. ملفات جوجل Google. Docs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

□5	□4	□3	□2	□1	5. لينك إن LinkedIn
□5	□4	□3	□2	□1	6. أكاديميا Academia.edu
□5	□4	□3	□2	□1	7. اليوتيوب YouTube

**B 5. ما هو تكرار استخدامك للإنترنت للأنشطة الآتية في الجانب الشخصي؟**

النشاط	=0 لم أستخدم أبدا	=1 نادرا	=2 في بعض الأحيان	=3 أحيانا	=4 دائما
1. استخدم الويب للتصفح أو البحث عن المعلومات (الأخبار، الأحداث، الخ)	□0	□1	□2	□3	□4
2. استخدم الويب لإرسال أو استقبال البريد الإلكتروني (الهوتميل،ياهو، الخ)	□0	□1	□2	□3	□4
3. استخدام الإنترنت للرسائل الفورية/الدرشة الفورية (مثل MSN)	□0	□1	□2	□3	□4
4. استخدم الإنترنت للتشبيك الإجتماعي (الفايس بوك، الخ)	□0	□1	□2	□3	□4
5. استخدم الإنترنت للتشارك بالصور و المصادر الرقمية (مثال فليكر Flickr)	□0	□1	□2	□3	□4
6. استخدم الإنترنت لخلق/انشاء المصادر وتشاركها مع الآخرين (مثال المدونات، الويكي، الخ)	□0	□1	□2	□3	□4
7. استخدم الإنترنت للمشاهدة والتشارك بالفيديو (اليوتيوب)	□0	□1	□2	□3	□4
8. استخدم الإنترنت للمساهمة بمحتوى وتطويره (مثال المدونات، الويكي، الخ)	□0	□1	□2	□3	□4
9. استخدم الإنترنت للتعاون في الأفكار مع الآخرين (المدونات، الويكي، الخ)	□0	□1	□2	□3	□4
10. استخدم الفايس بوك للاتصال/التواصل والتعاون في الأفكار مع الآخرين	□0	□1	□2	□3	□4
11. استخدم التويتر للحصول ومتابعة أنشطة الآخرين	□0	□1	□2	□3	□4
12. استخدم لينك إن أو أكاديميا ( Academia.edu ) (LinkedIn) للتعاون ( متابعة بحوث الآخرين، التحديث و الاتصال مع المهنيين في مجال التخصص)	□0	□1	□2	□3	□4

**B 6. ما هو تكرار استخدامك للإنترنت للأنشطة الآتية في الجانب التعليمي أو للتعلم؟**

النشاط	=0 لم أستخدم أبدا	=1 نادرا	=2 في بعض الأحيان	=3 أحيانا	=4 دائما
1. استخدم الويب للتصفح أو البحث عن المعلومات (الأخبار، الأحداث، الخ)	□0	□1	□2	□3	□4
2. استخدم الويب لإرسال أو استقبال البريد الإلكتروني (الهوتميل،ياهو، الخ)	□0	□1	□2	□3	□4
3. استخدام الإنترنت للرسائل الفورية / الدردشة الفورية (مثل MSN)	□0	□1	□2	□3	□4
4. استخدم الإنترنت للتشبيك الاجتماعي (الفايس بوك، الخ)	□0	□1	□2	□3	□4
5. استخدم الإنترنت للتشارك بالصور و المصادر الرقمية (مثال فليكر Flickr)	□0	□1	□2	□3	□4
6. استخدم الإنترنت لخلق/انشاء المصادر وتشاركها مع الآخرين (مثال المدونات، الويكي، الخ)	□0	□1	□2	□3	□4
7. استخدم الإنترنت للمشاهدة والتشارك بالفيديو (اليوتيوب)	□0	□1	□2	□3	□4
8. استخدم الإنترنت للمساهمة بمحتوى وتطويره (مثال المدونات، الويكي، الخ)	□0	□1	□2	□3	□4

□4	□3	□2	□1	□0	9. استخدم الإنترنت للتعاون في الأفكار مع الآخرين (المدونات، الويكي، الخ)
□4	□3	□2	□1	□0	10. استخدم الفيس بوك للاتصال/التواصل والتعاون في الأفكار مع الآخرين
□4	□3	□2	□1	□0	11. استخدم التويتر للحصول ومتابعة أنشطة الآخرين
□4	□3	□2	□1	□0	12. استخدم اللينك إن أو أكاديميا ( Academia.edu ) LinkedIn) للتعاون ( متابعة بحوث الآخرين، التحديث و الاتصال مع المهنيين في مجال التخصص)
□4	□3	□2	□1	□0	13. استخدم الويب للوصول الى البوابه/نظم ادارة التعلم (المودل Moodle)

### C. أدوات تطبيقات الإنترنت للتعلم

1 C. يرجى توضيح مستوى تفضيلك للدراسة في الحالات التالية حيث 1 = تفضيل ضعيف في مقابل و 4 = تفضيل قوي، الرجاء استخدام 0 إذا لم يكن لديك أي رأي حول ذلك.

التفضيل	تفضيلاً قويا ←	تفضيلاً ضعيفاً →			
□4	□3	□2	□1	□0	1. أفضل دراسة المقررات التي لا تعتمد على الاستخدام الرسمي للإنترنت في الفصل الدراسي ( الإنترنت فقط كأداة مساعدة للمقرر)
□4	□3	□2	□1	□0	2. أفضل دراسة المقررات التي تعتمد في تدريسها على نوع من الاستخدام الرسمي للإنترنت في الفصل الدراسي (تصفح الإيميل، البحث والتصفح لشبكة الإنترنت)
□4	□3	□2	□1	□0	3. أفضل دراسة المقررات التي تعتمد في تدريسها كلياً على الإنترنت في الفصل الدراسي (تعتمد أساساً على الإنترنت من خلال استخدام أنواع مختلفة من تطبيقات الإنترنت)
□4	□3	□2	□1	□0	4. أفضل دراسة المقررات التي تطرح كلياً على الخط المباشر ولا يوجد بها تفاعل مباشر وجه لوجه

2 C. يرجى توضيح أي من العبارات الآتية أفضل وصفا لأسلوب تعلمك؟

- 1 أفضل التعلم الفردي  
□2 أفضل التعلم الجماعي بدل الفردي  
□3 أفضل التعلم بنوعيه الفردي و الجماعي

3 C. هل لك أن تحدد مستوى موافقتك أو عدم موافقتك للعبارات التالية فيما يتعلق باستخدام تطبيقات الإنترنت المختلفة ضمن مقررات تخصص دراسات المعلومات ؟

تشمل تطبيقات الإنترنت المختلفة جميع التطبيقات خارج نظام ادارة التعلم ومن هذه التطبيقات الشبكات الإجتماعية، المدونات و الويكي						
لا يوافق بشدة	لا يوافق	محايد	أوافق بشدة	لا يوافق	لا يوافق بشدة	
□0	□5	□4	□3	□2	□1	1. استخدام تطبيقات الإنترنت المختلفة يحسن التعاون مع الآخرين
□0	□5	□4	□3	□2	□1	2. استخدم تطبيقات الإنترنت المختلفة يجعلني أنافس في البحث عن وظيفة
□0	□5	□4	□3	□2	□1	3. البيوتوب يدعم فهمي لحقل دراسات المعلومات (خدمات المعلومات، تنظيم المعلومات، ادارة المعلومات، الخ)
□0	□5	□4	□3	□2	□1	4. يسهل الفيس بوك تعاوني مع الآخرين (مهني المعلومات، المكتبيين أو اختصاصي المعلومات)
□0	□5	□4	□3	□2	□1	5. يساعدني تويتر على التعاون مع الآخرين من خلال متابعة أنشطتهم المختلفة (مهني المعلومات، المكتبيين أو اختصاصي المعلومات)

0	5	4	3	2	1	6. يمكنني اللينك إن وأو أكاديميا ( LinkedIn Academia.edu) من التعلم أكثر من خلال التعاون مع الآخرين
0	5	4	3	2	1	7. بشكل عام، يمكنني استخدام تطبيقات الإنترنت المختلفة من إعداد نفسي لسوق العمل المستقبلي

**C 4.** هل لك أن تحدد مستوى موافقتك أو عدم موافقتك للعبارات التالية فيما يتعلق باستخدام تطبيقات الإنترنت المختلفة في العمل المستقبلي؟

تشمل تطبيقات الإنترنت المختلفة جميع التطبيقات خارج نظام ادارة التعلم ومن هذه التطبيقات الشبكات الإجتماعية، المدونات و الويكي						
لا	أوافق	أوافق	محايد	لا أوافق	لا أوافق	
ينطبق	بشدة			أوافق	بشدة	
0	5	4	3	2	1	1. استخدام تطبيقات الإنترنت المختلفة سوف يحسن التعاون مع الآخرين
0	5	4	3	2	1	2. استخدم تطبيقات الإنترنت المختلفة سوف يجعلني أنافس في البحث عن وظيفة
0	5	4	3	2	1	3. سوف يدعم اليوتيوب فهمي لحقل دراسات المعلومات (خدمات المعلومات، تنظيم المعلومات، ادارة المعلومات، الخ)
0	5	4	3	2	1	4. سوف يسهل الفيس بوك تعاوني مع الآخرين (مهني المعلومات، المكتبيين أو اختصاصي المعلومات)
0	5	4	3	2	1	5. سوف يساعدني تويتر على التعاون مع الآخرين من خلال متابعة أنشطتهم المختلفة (مهني المعلومات، المكتبيين أو اختصاصي المعلومات)
0	5	4	3	2	1	6. سوف يمكنني اللينك إن وأو أكاديميا (LinkedIn and/or Academia.edu) من التعلم أكثر من خلال التعاون مع الآخرين
0	5	4	3	2	1	7. بشكل عام، سوف تمكنني استخدام تطبيقات الإنترنت المختلفة من إعداد نفسي لسوق العمل المستقبلي

**C 5.** هل لك أن تحدد مستوى موافقتك أو عدم موافقتك للعبارات التالية فيما يتعلق باستخدام تطبيقات الإنترنت المختلفة في التعليم مقارنة بالطرق التقليدية أو الطرق الأخرى المستخدمة؟

تشمل تطبيقات الإنترنت المختلفة جميع التطبيقات خارج نظام ادارة التعلم ومن هذه التطبيقات الشبكات الإجتماعية، المدونات و الويكي						
لا	أوافق	أوافق	محايد	لا أوافق	لا أوافق	
ينطبق	بشدة			أوافق	بشدة	
0	5	4	3	2	1	1. يمكنني استخدام تطبيقات الإنترنت المختلفة من الإتصال بفاعلية أكبر مقارنة بالأساليب الأخرى مثل (الاجتماع المباشر وجه لوجه، نظم ادارة التعلم)
0	5	4	3	2	1	2. يمكنني استخدام تطبيقات الإنترنت المختلفة من التعاون بفاعلية أكبر مقارنة بالأساليب الأخرى مثل (الاجتماع المباشر وجه لوجه، نظم ادارة التعلم)
0	5	4	3	2	1	3. استخدام تطبيقات الإنترنت المختلفة تحسن درجة مشاركتي ومساهمتي في مقررات دراسات المعلومات مقارنة بالطرق الأخرى مثل (الاجتماع المباشر وجه لوجه، نظم ادارة التعلم)
0	5	4	3	2	1	4. استخدام تطبيقات الإنترنت المختلفة يصرف انتباهي في عملية التعلم في المقررات الدراسية
0	5	4	3	2	1	5. أفضل استخدام تطبيقات الإنترنت المختلفة في مقرراتي الدراسية بدلا من الأساليب الأخرى (الاجتماع المباشر وجه لوجه، نظم ادارة التعلم)



## D. الحوافز والعوائق التي تحول دون اعتماد تطبيقات وأدوات الإنترنت

D 1 باستخدام المقاييس من 1 إلى 7، حيث يشير 1 = غير مهم للغاية و 7 = في غاية الأهمية، يرجى تقييم مدى أهمية العوامل الآتية في استخدامك للإنترنت؟

غير مهم للغاية	← →		في غاية الأهمية
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7
1. استخدام الإنترنت للحصول، الحفاظ على، أو إنهاء علاقاتي الشخصية			
2. تمكني الإنترنت من التعاون مع الآخرين			
3. استخدم الإنترنت للترفيه			
4. تطور تكنو لوجيا المعلومات والاتصال في مجتمعي يجبرني أو يدفعني من استخدام تطبيقات الإنترنت المختلفة			
5. يمكنني استخدام الإنترنت من تعلم أشياء كثيرة			
6. معظم تطبيقات الإنترنت متاحة مجاناً			
7. معظم تطبيقات الإنترنت المختلفة سهلة الاستخدام			
8. تتصف معظم تطبيقات الإنترنت المختلفة بالمرونة			
9. توفر أجهزة الاتصال مثل الهواتف الذكية			

D 2 باستخدام المقاييس من 1 إلى 7، حيث يشير 1 = غير مهم للغاية و 7 = في غاية الأهمية، يرجى تقييم مدى أهمية العوامل العوائق الصعوبات الآتية في استخدامك للإنترنت؟

غير مهم للغاية	← →		في غاية الأهمية
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7
1. عدم امتلاك مهارات تكنولوجيا المعلومات			
2. عدم امتلاك الثقة بالنفس			
3. لا أشعر بالراحة عند استخدام التكنولوجيا الحديثة أو تطبيقات الويب 2.0 ذات الطبيعة المفتوحة أو العامة			
4. بطئ الإنترنت			
5. عدم امتلاك المعرفة			
6. عدم امتلاك الوقت اللازم للتعلم عن تطبيقات الإنترنت المختلفة			
7. الخوف من التكنولوجيا			
8. مشكلة اللغة			
9. غياب التشجيع و التحفيز من الهيئة الأكاديمية (أعضاء هيئة التدريس)			
10. غياب الوعي بأهمية هذه التطبيقات في التعلم			
11. سياسة الإنترنت في الجامعة			
12. سياسات واجراءات الاتصال بالإنترنت والمحكومة من قبل شركات الاتصال			
13. خدمة الإنترنت عالية التكلفة			
14. غياب دور الحكومة في تبني تطبيقات الإنترنت في التعليم			
15. مخاوف الأمان والخصوصية على الإنترنت			

نهاية الاستبيان، شكراً جزيلاً لتعاونك

## C. Interview Major Questions

### Internet and Technology Background

1. Could you please describe how you use the internet, including professional and personal uses and specifically for teaching and learning?
2. Which internet applications/online tools you are currently using? What for? How often?

### Choosing and Using Online Tools within A Curriculum

1. What are some of the innovative ways you are using online tools/Web 2.0 applications in teaching, especially in “supplementing/supporting/replacing an existing courses”?
2. Are there any online tools/Web 2.0 applications that you plan to adopt in teaching programs in addition to the ones that you are already using? Why?
3. Do you think Web 2.0 has influenced on communication and collaboration activities between academic-academic, academic-student, and student- student? How? Could you please provide examples of collaboration activities?
4. What additional value do online tools/Web 2.0 applications bring to IS students compared with other educational technologies such as learning management systems in regard to what they learn for future employment and for self-development?
5. How do you make decision about whether online tools/Web 2.0 applications are good for your teaching and learning practices? How do you find them in terms of ease of use and usefulness?
6. Can you think of any ways in which online tools/Web 2.0 applications could be shaped for teaching and learning purposes?

### Motivations of Using Various Online Tools

1. Could you please tell us why are you using these applications, whether in teaching or in personal uses? What would motive you to learn more about online tools/Web 2.0 applications?

### Barriers and Challenges of Using and Adoption Online Tools

1. What are some barriers/challenges could prevent you from adopting and using online tools/Web 2.0 applications?

## Appendix D. Demographic and Background Information Checklist

Date:

Time:

Purpose	The main purpose of this checklist is to gain demographic and background Information about Participants
Interviewee	A
Description	This checklist is designed to gather demographic and background information about IS academics. This includes computer and internet use. This information is confidential and will be used only for this research.

### 1. DEMOGRAPHIC INFORMATION

A 1. Gender

What is your sex? <sub>1</sub> Male <sub>2</sub> Female

A 2. Age

What is your age? \_\_\_\_\_

A 3. Teaching Experience

How many years have you been teaching at SQU? \_\_\_\_\_

A 4. Academic Rank

What is your position title at the university? <sub>1</sub> Demonstrator/ Teaching Assistant <sub>2</sub> Lecturer  
<sub>3</sub> Assistant Professor <sub>4</sub> Associate Professor <sub>5</sub> Professor <sub>6</sub> Training Supervisor

A 5. Last Degree Earned

What was your last degree earned? <sub>1</sub> Bachelor or equivalent <sub>2</sub> Higher Diploma or equivalent  
<sub>3</sub> Masters or equivalent <sub>4</sub> PhD or equivalent

A 6. Last Degree Earned/Country

In which country did you complete your last degree? \_\_\_\_\_

A 7. Last Degree Earned/Date

In which year did you complete your last degree? \_\_\_\_\_

A 8. Language Teaching in the Classroom

Which language do you use in teaching? \_\_\_\_\_

### 2. INTERNET AND COMPUTER USE

A 9. Do you have access to the internet at home? <sub>1</sub> Yes <sub>2</sub> No

A 10. Where do you most frequently access the internet? <sub>1</sub> Home <sub>2</sub> Office <sub>3</sub> Library  
<sub>4</sub> other, please specify.....

A 11. With which devices do you use the internet? <sub>1</sub> PC <sub>2</sub> Laptop <sub>3</sub> Mobile <sub>4</sub> ipad  
<sub>5</sub> other, please specify.....

A 12. How long have you been using the internet? \_\_\_\_\_

A 13. How often do you access the internet? <sub>1</sub> once a month or less <sub>2</sub> once a week <sub>3</sub> several times a week  
<sub>4</sub> every day <sub>5</sub> several times a day

A 14. Do you use learning management system (LMS) (e.g., Moodle, blackboard, WebCT) in teaching? <sub>1</sub> Yes <sub>2</sub> No

A 15. If yes, how long have you been using these technologies for teaching? \_\_\_\_\_

## Appendix E. Online Tools Checklist

Date:

Time:

Purpose	The main purpose of this checklist is to explore online tools using by academics
Interviewee	A
Description	This checklist is designed to address the awareness and familiarity of the academics with online tools. This information is confidential and will be used only for this research

**B 1. The following table lists a number of applications and tools for innovation. Please indicate your level of familiarity with these applications by ticking the appropriate box**

	Never heard about it	Heard about it	Have a view and have commented	Have an account
1. Blogs (e.g., Google blogger, WordPress or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
2. Wikis (e.g., Wikipedia or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
3. Online survey (e.g., Google. Doc.)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
4. Video sharing (e.g., YouTube or similar.)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
5. Social networking sites ( Facebook, MySpace or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
6. Image/photos sharing (e.g., Flickr or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
7. Slide/file sharing (e.g., SlideShare or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
8. Mashups (Google Maps or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
9. Podcast or similar	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
10. Social bookmarking/Folksonomy (Flickr, delicious or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
11. RSS (Really Simple Syndication)/ RSS Readers (e.g., Google reader or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
12. Webconferencing (e.g., using webcam with software or similar)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

**B 2. Are there any online tools/Web 2.0 applications you have used with your students?**

<sub>1</sub> Yes, please list them \_\_\_\_\_

<sub>2</sub> No

## **Appendix F. Consent Forms and Information Sheets Attached to the Interview and the Case Studies**

- F 1. Information Sheet to Participate in Research-Face to face Interview
- F 2. Participant's Consent Form-Face to face Interview
- F 3. Information Sheet to Participant in a Case Study One-Lecturer
- F 4. Consent Form to Participate in a Case Study One-Lecturer
- F 5. Information Sheet to Participate in a Case Study One- Students Focus Group
- F 6. Consent Form to Participate in a Case Study One-Students Focus Group
- F 7. Information Sheet to Participate in a Case Study Two-Lecturer
- F 8. Consent Form to Participate in a Case Study Two-Lecturer
- F 9. Information Sheet to Participant in a Case Study Two-student
- F 10. Consent Form to Participant in a Case Study Two-student

## **F 1. Information Sheet to Participate in Research-Face to face Interview**

I'm writing to request your participation in a research study. This form provides you with information about the study. Please read the information below before deciding whether or not to take part. Your participation is entirely voluntary and will remain entirely anonymous and confidential. Your contribution towards this research will be most valuable for this research and thus will be highly appreciated.

If you decide to participate, you will be invited to a face-to-face interview by the researcher. This interview can be conducted at your convenience, and should take approximately 45-55 minutes to complete.

### **Title of the Study:**

Online Tools in Teaching and Learning and the Problem of 'Web 2.0': A Case Study of an Information Studies Department, Oman

### **Principal Investigator:**

The research study is being conducted by Salim S. Al Kindi, a PhD student in the Department of Internet Studies, Curtin University, under the primary supervision of Professor Matthew Allen. For more details or queries please contact us on the following address

**Researcher:** Salim Said Alkindi,  
Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om.  
Tel: +61 431550087 (Australia), Tel: +968 99050367 (Oman)

**Supervisor:** Professor Matthew Allen  
Head of Department, Internet Studies, School of Media, Culture & Creative Arts,  
Faculty of Humanities  
Contact (+618) 9266 3511 or (+618) 9266 3166  
Email: M.Allen@exchange.curtin.edu.au  
Building 208 – Education, Room 311D, Bentley Campus

### **Purpose of the Study:**

The study aims to investigate the use of online tools which commonly known as Web 2.0 and its impact on the context of teaching and learning among the academic staff of Department of Information Studies (DIS) in Oman. It attempts to provide clear map of the use of these applications in teaching context.

### **Description of the Study:**

The main purpose of this study is to explore how are academic staff within Department of information studies (DIS) in Oman adopting and using online tools in their teaching practice. The primary purposes of the interviews are to:

- Explore the ambiguity of the 'Web 2.0 label' in the academic community.
- Understand the context for online tools use by academics at DIS in Oman with reference to other uses of technologies for teaching and learning, the relationship of these applications to curriculum being taught and the social context of Oman.
- Identify the way in which online tools are shaped and perceived by academics at DIS in Oman in a range of contexts, including professional and personal, specifically for teaching and learning.
- Determine the reasons why IS academics use or do not use online tools in their teaching and learning, focusing on incentives for and barriers to adoption and innovation.

**Risks or Discomforts:**

There are no known harms including physical, emotional, or psychological associated with your participation in this research. You have the right if you decide not to take part or to stop taking part in this study anytime. Refusal to participate in this study will in no way affect in your academic status.

**Benefits of the Study:**

This research is expected to conclude with high value benefit to you, your department and university and society. It will create new knowledge about the level of use and effectiveness of Web 2.0 applications in teaching and learning in Oman. The results will enable SQU to identify the barriers that influence academic learning communities in regard to the adoption of such applications in their learning and teaching. This will support Omani government to address several issues (e.g., workload and Information technology support). Results of this research also will support your needs of technologies and work motivations.

**Confidentiality:**

The identity of participants will be completely confidential, and researcher and supervisor only will have access to the collected data. Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from this interview. Information from this interview will be kept strictly confidential. Interviews will be assigned a code number to conceal the participants' identity and this information will be stored securely at Curtin University, Department of Internet Studies for three years after the study is completed. Your data will be used for the study purposes only, and you will not be individually identifiable in any reports or publications.

**Human Research Ethics Committee**

This survey has received the approval of Human Research and Ethics Committee (HREC) of Curtin University (Approval number is MCCA-01-12). For further information about the ethics of this research, please contact the Human Research and Ethics Committee (secretary) in the following address:

Secretary, Human Research and Ethics Committee, Office of Research and development,  
Level 1, Building 100, Curtin University, GPO Box U1987, Perth 6845  
Phone (08) 92662784, Fax: (08) 92663793 or Email: hrec@curtin.edu.au.

Thank you for your contribution in sharing your experiences and opinions

## F 2. Participant's Consent Form-Face to face Interview

Title of the Study: Online Tools in Teaching and Learning and the Problem of 'Web 2.0': A Case Study of an Information Studies Department, Oman

I have been informed of and understand the purposes of the interview. I understand the nature and intent of this research. I also understand that my participation in this interview is completely voluntary and I have the right to withdraw from the study at any time, without giving any reason. A decision to withdraw from the interview will not affect my academic status. I have been given an opportunity to ask questions about the study or the interview. All personal information provided by myself in this interview will remain confidential and will not be identified in any publication or presentation arising from the interview.

I voluntarily agree to participate in this interview and I have received a copy of interview information sheet. I consent to the processing of my personal information for the purposes explained to me in this study.

Yes

No

Name of Participant \_\_\_\_\_

Participant's signature: \_\_\_\_\_

Date: \_\_\_\_\_

Principal Investigator: Salim S. Al kindi

Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om

Tel: +61 431550087 (Australia)

Tel: +968 99050367 (Oman)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_



### **F 3. Information Sheet to Participant in a Case Study One-Lecturer**

I'm writing to request your participation in a research study. This form provides you with information about the study. Please read the information below before deciding whether or not to take part. Your participation is entirely voluntary and will remain entirely anonymous and confidential. Your contribution towards this research will be most valuable for this research and thus will be highly appreciated.

If you decide to participate, you will be invited to a face-to-face interview by the researcher. This interview can be conducted at your convenience, and should take approximately 30-55 minutes.

#### **Title of the Study:**

Online Tools in Teaching and Learning and the Problem of 'Web 2.0': A Case Study of an Information Studies Department, Oman

#### **Principal Investigator:**

The research study is being conducted by Salim S. Al Kindi, a PhD student in the Department of Internet Studies, Curtin University, under the primary supervision of Professor Matthew Allen. For more details or queries please contact us on the following address

**Researcher:** Salim Said Alkindi,  
Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om.  
Tel: +61 431550087 (Australia), Tel: +968 99050367 (Oman)

**Supervisor:** Professor Matthew Allen  
Head of Department, Internet Studies, School of Media, Culture & Creative Arts,  
Faculty of Humanities  
Contact (+618) 9266 3511 or (+618) 9266 3166  
Email: M.Allen@exchange.curtin.edu.au  
Building 208 – Education, Room 311D, Bentley Campus

#### **Purpose of the Study:**

The study aims to investigate the use of online tools includes Web 2.0 applications and their impact on the context of teaching among the academic staff of Department of Information Studies (DIS) in Oman. It attempts to provide clear map of the use of these applications in teaching context.

#### **Description of the Study:**

The main purpose of this study is to explore how are academic staff within the Department of Information Studies (DIS) at Sultan Qaboos University in Oman adopting and shaping online tools in their teaching practice. What is Information Studies students' attitude toward using these tools within the IS curriculum?.

The primary goals of this case study are to:

- explore the actual use of online tools in the classroom
- explore the perceived effectiveness of online tools by students for learning

The interview will include questions on unit description and syllabus, the type of online tools activities students work on in the classroom or for assignments, and students' assessments and challenging aspects of this technique, including social considerations and teaching style.

#### **Risks or Discomforts:**

There are no known harms including physical, emotional, or psychological associated with your participation in this research. You have the right if you decide not to take part or to stop

taking part in this study anytime. Refusal to participate in this study will in no way affect in your academic status.

**Benefits of the Study:**

This research is expected to conclude with high value benefit to you, your department and university and society. It will create new knowledge about the level of use and effectiveness of online tools in teaching and learning in Oman. The results will enable SQU to identify the barriers that influence academic learning communities in regard to the adoption of such applications in their learning and teaching. This will support Omani government to address several issues (e.g., workload and Information technology support). Results of this research also will support your needs of technologies and work motivations.

**Confidentiality:**

The identity of participants will be completely confidential, and researcher and supervisor only will have access to the collected data. Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from this case study. Information from this case study will be kept strictly confidential. Data from the case will be assigned a code number to conceal the participants' identity and this information will be stored securely at Curtin University, Department of Internet Studies for three years after the study is completed. Your data will be used for the study purposes only, and you will not be individually identifiable in any reports or publications.

**Human Research Ethics Committee**

This survey has received the approval of Human Research and Ethics Committee (HREC) of Curtin University (Approval number is MCCA-01-12). For further information about the ethics of this research, please contact the Human Research and Ethics Committee (secretary) in the following address:

Secretary, Human Research and Ethics Committee, Office of Research and development,  
Level 1, Building 100, Curtin University, GPO Box U1987, Perth 6845  
Phone (08) 92662784, Fax: (08) 92663793 or Email: hrec@curtin.edu.au.

Thank you for your contribution in sharing your experiences and opinions

#### **F 4. Consent Form to Participate in a Case Study One-Lecturer**

Title of the Study: Online Tools in Teaching and Learning and the Problem of ‘Web 2.0’: A Case Study of an Information Studies Department, Oman

I have been informed of and understand the purposes of the interview. I understand the nature and intent of this research. I also understand that my participation in this research is completely voluntary and I have the right to withdraw from the study at any time, without giving any reason. A decision to withdraw from the study will not affect my academic status. I have been given an opportunity to ask questions about the study. All personal information provided by myself in this study will remain confidential and will not be identified in any publication or presentation arising from the research.

I voluntarily agree to involve in this case study and I have received a copy of case study information sheet. I consent to the processing of my personal information for the purposes explained to me in this study.

Yes

No

Name of Participant \_\_\_\_\_

Participant's signature: \_\_\_\_\_

Date: \_\_\_\_\_

Principal Investigator: Salim S. Al kindi

Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om

Tel: +61 431550087 (Australia)

Tel: +968 99050367 (Oman)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **F 5. Information Sheet to Participate in a Case Study One- Students Focus Group**

I'm writing to request your participation in a research study. This form provides you with information about the case study. Please read the information below before deciding whether or not to take part. Your participation is entirely voluntary and will remain entirely anonymous and confidential. Your contribution towards this research will be most valuable for this research and thus will be highly appreciated.

If you decide to participate, you will be invited to Face-to-face focus groups by the researcher. This interview can be conducted at your convenience, and should take approximately 25-35 minutes.

### **Title of the Study:**

Online Tools in Teaching and Learning and the Problem of 'Web 2.0': A Case Study of an Information Studies Department, Oman

### **Principal Investigator:**

The research study is being conducted by Salim S. Al Kindi, a PhD student in the Department of Internet Studies, Curtin University, under the primary supervision of Professor Matthew Allen. For more details or queries please contact us on the following address

**Researcher:** Salim Said Alkindi,  
Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om.  
Tel: +61 431550087 (Australia), Tel: +968 99050367 (Oman)

**Supervisor:** Professor Matthew Allen  
Head of Department, Internet Studies, School of Media, Culture & Creative Arts,  
Faculty of Humanities  
Contact (+618) 9266 3511 or (+618) 9266 3166  
Email: M.Allen@exchange.curtin.edu.au  
Building 208 – Education, Room 311D, Bentley Campus

### **Purpose of the Study:**

The study aims to investigate the use of various internet applications and its impact on the context of learning among the students of Department of Information Studies (DIS) in Oman. It attempts to provide clear map of the use of these applications in learning context.

### **Description of the Case Study:**

The main purpose of this study is to explore how are academic staff within the Department of Information Studies (DIS) at Sultan Qaboos University in Oman adopting and shaping online tools in their teaching practice. What is Information Studies students' attitude toward using these tools within the IS curriculum?. The primary goals of this case study are to:

- explore the actual use of Web 2.0 applications in the classroom
- explore the perceived effectiveness of Web 2.0 applications by students for learning

This focus group interview will include four main points to discuss:

- learning and innovations on this course with this application
- Willingness to use this application in the future
- Difficulties in learning with this application

**Risks or Discomforts:**

There are no known harms including physical, emotional, or psychological associated with your participation in this case study. You have the right if you decide not to take part or to stop taking part in this study anytime. Refusal to participate in this study will in no way affect in your study status.

**Benefits of the Study:**

This research is expected to conclude with high value benefit to you, your department and university and society. It will create new knowledge about the level of use and effectiveness of various internet applications in learning in Oman. The results will enable your university to identify the barriers that influence students learning communities in regard to the adoption of such applications in their learning. This will support university and the department to address several issues (e.g., Information technology support and Internet access). Results of this research also will support your needs of technologies in future workplace and other skills related to the use of these applications. It will enable systemic improvements in the educational approach in Oman in both the target discipline (IS) and others.

**Confidentiality:**

The identity of participants will be completely confidential, and researcher and supervisor only will have access to the collected data. Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from this case study. Information from this case study will be kept strictly confidential. Data from the case will be assigned a code number to conceal the participants' identity and this information will be stored securely at Curtin University, Department of Internet Studies for three years after the study is completed. Your data will be used for the study purposes only, and you will not be individually identifiable in any reports or publications.

**Human Research Ethics Committee**

This survey has received the approval of Human Research and Ethics Committee (HREC) of Curtin University (Approval number is MCCA-01-12). For further information about the ethics of this research, please contact the Human Research and Ethics Committee (secretary) in the following address:

Secretary, Human Research and Ethics Committee, Office of Research and development,  
Level 1, Building 100, Curtin University, GPO Box U1987, Perth 6845  
Phone (08) 92662784, Fax: (08) 92663793 or Email: hrec@curtin.edu.au.

Thank you for your contribution in sharing your experiences and opinions

## **F 6. Consent Form to Participate in a Case Study One-Students Focus Group**

Title of the Study: Online Tools in Teaching and Learning and the Problem of ‘Web 2.0’: A Case Study of an Information Studies Department, Oman

I have been informed of and understand the purposes of this interview. I understand the nature and intent of this research. I also understand that my participation in this case study is completely voluntary and I have the right to withdraw from the study at any time, without giving any reason. A decision to withdraw from the interview will not affect my academic studies. I have been given an opportunity to ask questions about the study or the interview. All personal information provided by myself in this case study will remain confidential and will not be identified in any publication or presentation arising from the interview.

I voluntarily agree to participate in this case study and I have received a copy of interview information sheet. I consent to the processing of my personal information for the purposes explained to me in this study.

Yes

No

Name of Participant \_\_\_\_\_

Participant's signature: \_\_\_\_\_

Date: \_\_\_\_\_

Principal Investigator: Salim S. Al kindi

Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om

Tel: +61 431550087 (Australia)

Tel: +968 99050367 (Oman)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **F 7. Information Sheet to Participate in a Case Study Two-Lecturer**

I'm writing to request your participation in a research study. This form provides you with information about the study. Please read the information below before deciding whether or not to take part. Your participation is entirely voluntary and will remain entirely anonymous and confidential. Your contribution towards this research will be most valuable for this research and thus will be highly appreciated.

If you decide to participate, the researcher will check your online activities with your students and take a note, you will be asked to take a note as well. You will be observed teaching within using online tools during the whole semester. At the end of the semester you will be invited to a face-to-face interview by the researcher. This interview can be conducted at your convenience, and should take approximately 30-55 minutes.

### **Title of the Study:**

Online Tools in Teaching and Learning and the Problem of 'Web 2.0': A Case Study of an Information Studies Department, Oman

### **Principal Investigator:**

The research study is being conducted by Salim S. Al Kindi, a PhD student in the Department of Internet Studies, Curtin University, under the primary supervision of Professor Matthew Allen. For more details or queries please contact us on the following address

**Researcher:** Salim Said Alkindi,  
Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om.  
Tel: +61 431550087 (Australia), Tel: +968 99050367 (Oman)

**Supervisor:** Professor Matthew Allen  
Head of Department, Internet Studies, School of Media, Culture & Creative Arts,  
Faculty of Humanities  
Contact (+618) 9266 3511 or (+618) 9266 3166  
Email: M.Allen@exchange.curtin.edu.au  
Building 208 – Education, Room 311D, Bentley Campus

### **Purpose of the Study:**

The study aims to investigate the use of online tools and their impact on the context of teaching and learning among the academic staff of Department of Information Studies (DIS) in Oman. It attempts to provide clear map of the use of these applications in teaching context.

### **Description of the Study:**

The main purpose of this study is to explore how are academic staff within Department of Information Studies (DIS) in Oman adopting and using online tools in their teaching practice. The primary goals of this case study are to:

- explore the actual use of online tools in the classroom
- explore the perceived effectiveness of online tools by students for learning

This online observation period will be continued for 10 weeks. During this time, the researcher will check online activities using online tools.

You will be observed according to three criteria:

- Participation includes your role within and contributions to students' activities.
- Interaction and collaboration includes your use of communication devices for various activities, for professional and specifically for teaching.
- Reflection and feedback includes your reflecting on your experiences towards the applications used in the course.

The interview will include questions about your feedback using this technology in teaching. This included your reflecting on your experiences and attitudes toward the applications used in the course.

**Risks or Discomforts:**

There are no known harms including physical, emotional, or psychological associated with your participation in this research. You have the right if you decide not to take part or to stop taking part in this study anytime. Refusal to participate in this study will in no way affect in your academic status.

**Benefits of the Study:**

This research is expected to conclude with high value benefit to you, your department and university and society. It will create new knowledge about the level of use and effectiveness of these applications in teaching and learning in Oman. The results will enable SQU to identify the barriers that influence academic learning communities in regard to the adoption of such applications in their learning and teaching. This will support Omani government to address several issues (e.g., workload and Information technology support). Results of this research also will support your needs of technologies and work motivations.

**Confidentiality:**

The identity of participants will be completely confidential, and researcher and supervisor only will have access to the collected data. Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from this case study. Information from this case study will be kept strictly confidential. Data obtained from the case will be assigned a code number to conceal the participants' identity and this information will be stored securely at Curtin University, Department of Internet Studies for three years after the study is completed. Your data will be used for the study purposes only, and you will not be individually identifiable in any reports or publications.

**Human Research Ethics Committee**

This survey has received the approval of Human Research and Ethics Committee (HREC) of Curtin University (Approval number is MCCA-01-12). For further information about the ethics of this research, please contact the Human Research and Ethics Committee (secretary) in the following address:

Secretary, Human Research and Ethics Committee, Office of Research and development,  
Level 1, Building 100, Curtin University, GPO Box U1987, Perth 6845  
Phone (08) 92662784, Fax: (08) 92663793 or Email: hrec@curtin.edu.au.

Thank you for your contribution in sharing your experiences and opinions



## F 8. Consent Form to Participate in a Case Study Two-Lecturer

Title of the Study: Online Tools in Teaching and Learning and the Problem of ‘Web 2.0’: A Case Study of an Information Studies Department, Oman

I have been informed of and understand the purposes of online observation and interview. I understand the nature and intent of this research. I also understand that my participation in this research is completely voluntary and I have the right to withdraw from the study at any time, without giving any reason. A decision to withdraw from the study will not affect my academic status. I have been given an opportunity to ask questions about the study. All personal information provided by myself in this study will remain confidential and will not be identified in any publication or presentation arising from the research.

I voluntarily agree to involve in this case study and I have received a copy of case study information sheet. I consent to the processing of my personal information for the purposes explained to me in this study.

Yes

No

Name of Participant \_\_\_\_\_

Participant's signature: \_\_\_\_\_

Date: \_\_\_\_\_

Principal Investigator: Salim S. Al kindi

Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om

Tel: +61 431550087 (Australia)

Tel: +968 99050367 (Oman)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **F 9. Information Sheet to Participant in a Case Study Two-student**

I'm writing to request your participation in a research study. This form provides you with information about the case study. Please read the information below before deciding whether or not to take part. Your participation is entirely voluntary and will remain entirely anonymous and confidential. Your contribution towards this research will be most valuable for this research and thus will be highly appreciated.

If you decide to involve in this case, the researcher will observe you online in addition to checking online activities between you and academic and then identifying the main activities including participation, interaction and collaboration, and reflection and feedback. You will be observed learning within using online tools. At the end of the semester, you will be invited to Face-to-face by the researcher to gather feedback using this technology in learning.

### **Title of the Study:**

Online Tools in Teaching and Learning and the Problem of 'Web 2.0': A Case Study of an Information Studies Department, Oman

### **Principal Investigator:**

The research study is being conducted by Salim S. Al Kindi, a PhD student in the Department of Internet Studies, Curtin University, under the primary supervision of Professor Matthew Allen. For more details or queries please contact us on the following address

**Researcher:** Salim Said Alkindi,

Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om.

Tel: +61 431550087 (Australia), Tel: +968 99050367 (Oman)

**Supervisor:** Professor Matthew Allen

Head of Department, Internet Studies, School of Media, Culture & Creative Arts,  
Faculty of Humanities

Contact (+618) 9266 3511 or (+618) 9266 3166

Email: M.Allen@exchange.curtin.edu.au

Building 208 – Education, Room 311D, Bentley Campus

### **Purpose of the Study:**

The study aims to investigate the use of various internet applications and its impact on the context of learning among the students of Department of Information Studies (DIS) in Oman. It attempts to provide clear map of the use of these applications in learning context.

### **Description of the Case Study:**

The main purpose of this study is to how are academic staff within the Department of Information Studies (DIS) at Sultan Qaboos University in Oman adopting and shaping online tools in their teaching practice. What is Information Studies students' attitude toward using these tools within the IS curriculum?.

The primary goals of this case study are to:

- explore the actual use of Web 2.0 applications in the classroom
- explore the perceived effectiveness of Web 2.0 applications by students for learning

This online observation period will be continued for 10 weeks and will be coordinated with DIS. During this time, the researcher will check your online activities. You will be observed according to three criteria:

- Participation includes individual production and collectively generated content, contribution to collaborative resources and uploading of creative works and ideas.
- Interaction and collaboration includes use of communication devices for various activities, both professional and personal, and specifically for learning.
- Reflection and feedback includes your reflecting on your experiences towards the applications used in the course.

The interview will include questions about your feedback using this technology in learning. This included your reflecting on your experiences and attitudes toward the applications used in the course.

**Risks or Discomforts:**

There are no known harms including physical, emotional, or psychological associated with your participation in this case study. You have the right if you decide not to take part or to stop taking part in this study anytime. Refusal to participate in this study will in no way affect in your study status.

**Benefits of the Study:**

This research is expected to conclude with high value benefit to you, your department and university and society. It will create new knowledge about the level of use and effectiveness of various internet applications in learning in Oman. The results will enable your university to identify the barriers that influence students learning communities in regard to the adoption of such applications in their learning. This will support university and the department to address several issues (e.g., Information technology support and Internet access). Results of this research also will support your needs of technologies in future workplace and other skills related to the use of these applications. It will enable systemic improvements in the educational approach in Oman in both the target discipline (IS) and others.

**Confidentiality:**

The identity of participants will be completely confidential, and researcher and supervisor only will have access to the collected data. Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation resulting from this case study. Information from this case study will be kept strictly confidential. Data from the case will be assigned a code number to conceal the participants' identity and this information will be stored securely at Curtin University, Department of Internet Studies for three years after the study is completed. Your data will be used for the study purposes only, and you will not be individually identifiable in any reports or publications.

**Human Research Ethics Committee**

This survey has received the approval of Human Research and Ethics Committee (HREC) of Curtin University (Approval number is MCCA-01-12). For further information about the ethics of this research, please contact the Human Research and Ethics Committee (secretary) in the following address:

Secretary, Human Research and Ethics Committee, Office of Research and development, Level 1, Building 100, Curtin University, GPO Box U1987, Perth 6845  
Phone (08) 92662784, Fax: (08) 92663793 or Email: hrec@curtin.edu.au.

Thank you for your contribution in sharing your experiences and opinions

## F 10. Consent Form to Participant in a Case Study Two-student

Title of the Study: Online Tools in Teaching and Learning and the Problem of 'Web 2.0': A Case Study of an Information Studies Department, Oman

I have been informed of and understand the purposes of online observation and interview. I understand the nature and intent of this research. I also understand that my participation in this research is completely voluntary and I have the right to withdraw from the study at any time, without giving any reason. A decision to withdraw from the study will not affect my academic studies. I have been given an opportunity to ask questions about the study. All personal information provided by myself in this study will remain confidential and will not be identified in any publication or presentation arising from the research.

I voluntarily agree to involve in this case study and I have received a copy of case study information sheet. I consent to the processing of my personal information for the purposes explained to me in this study.

Yes

No

Name of Participant \_\_\_\_\_

Participant's signature: \_\_\_\_\_

Date: \_\_\_\_\_

Principal Investigator: Salim S. Al kindi

Email: salimsaid.alkindi@postgrad.curtin.edu.au or salimsk@squ.edu.om

Tel: +61 431550087 (Australia)

Tel: +968 99050367 (Oman)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix G: Supplement, Chi-Squares and Cross-Tabulation Tables

Table 6.23 A. Chi-Square Tests ‘Gender’ versus ‘Language Problem’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.633 <sup>a</sup>	7	.041
Likelihood Ratio	14.615	7	.041
Linear-by-Linear Association	.841	1	.359
N of Valid Cases	140		

a. 6 cells (37.5%) have expected count less than 5. The minimum expected count is .79.

Table 6.23 B. Cross-Tabulation ‘Gender’ versus ‘Language Problem’

Language Problem		Gender		Total
		Male	Female	
No Opinion	Count	2	1	3
	% within Language problem	66.7%	33.3%	100.0%
	% within Gender	5.4%	1.0%	2.1%
	% of Total	1.4%	0.7%	2.1%
1. Extremely unimportant	Count	1	7	8
	% within Language problem	12.5%	87.5%	100.0%
	% within Gender	2.7%	6.8%	5.7%
	% of Total	0.7%	5.0%	5.7%
2. Very unimportant	Count	1	9	10
	% within Language problem	10.0%	90.0%	100.0%
	% within Gender	2.7%	8.7%	7.1%
	% of Total	0.7%	6.4%	7.1%
3. Somewhat unimportant	Count	4	6	10
	% within Language problem	40.0%	60.0%	100.0%
	% within Gender	10.8%	5.8%	7.1%
	% of Total	2.9%	4.3%	7.1%
4. Neither important nor unimportant,	Count	6	9	15
	% within Language problem	40.0%	60.0%	100.0%
	% within Gender	16.2%	8.7%	10.7%
	% of Total	4.3%	6.4%	10.7%
5. Somewhat important	Count	10	12	22
	% within Language problem	45.5%	54.5%	100.0%
	% within Gender	<b>27.0%</b>	<b>11.7%</b>	15.7%
	% of Total	7.1%	8.6%	15.7%
6. Very important	Count	3	23	26
	% within Language problem	11.5%	88.5%	100.0%
	% within Gender	<b>8.1%</b>	<b>22.3%</b>	18.6%
	% of Total	2.1%	16.4%	18.6%
7. Extremely important	Count	10	36	46
	% within Language problem	21.7%	78.3%	100.0%
	% within Gender	<b>27.0%</b>	<b>35.0%</b>	32.9%
	% of Total	7.1%	25.7%	32.9%
Total	Count	37	103	140
	% within Language problem	26.4%	73.6%	100.0%
	% within Gender	100.0%	100.0%	100.0%
	% of Total	26.4%	73.6%	100.0%

Table 6.24 A. Chi-Square Tests ‘Gender’ versus ‘Lack of Awareness of the Benefit of These Applications for Learning’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.388 <sup>a</sup>	6	.037
Likelihood Ratio	14.681	6	.023
Linear-by-Linear Association	4.607	1	.032
N of Valid Cases	140		
a. 4 cells (28.6%) have expected count less than 5. The minimum expected count is 1.32.			

Table 6.24 B. Cross-Tabulation ‘Gender’ versus ‘Lack of awareness of the benefit of these applications for learning’

Lack of awareness of benefit of these applications for learning		Gender		Total
		Male	Female	
1. Extremely unimportant	Count	2	3	5
	% within Lack of awareness of benefit of these applications for learning	40.0%	60.0%	100%
	% within Gender	5.4%	2.9%	3.6%
	% of Total	1.4%	2.1%	3.6%
2. Very unimportant	Count	0	6	6
	% within Lack of awareness of benefit of these applications for learning	0.0%	100%	100%
	% within Gender	0.0%	5.8%	4.3%
	% of Total	0.0%	4.3%	4.3%
3. Somewhat unimportant	Count	10	9	19
	% within Lack of awareness of benefit of these applications for learning	52.6%	47.4%	100%
	% within Gender	<b>27.0%</b>	<b>8.7%</b>	13.6%
	% of Total	7.1%	6.4%	13.6%
4. Neither important nor unimportant	Count	8	18	26
	% within Lack of awareness of benefit of these applications for learning	30.8%	69.2%	100%
	% within Gender	21.6%	17.5%	18.6%
	% of Total	5.7%	12.9%	18.6%
5. Somewhat important	Count	7	21	28
	% within Lack of awareness of benefit of these applications for learning	25.0%	75.0%	100%
	% within Gender	18.9%	20.4%	20.0%
	% of Total	<b>5.0%</b>	<b>15.0%</b>	20.0%
6. Very important	Count	6	16	22
	% within Lack of awareness of benefit of these applications for learning	27.3%	72.7%	100.0%
	% within Gender	16.2%	15.5%	15.7%
	% of Total	4.3%	11.4%	15.7%
7. Extremely important	Count	4	30	34
	% within Lack of awareness of benefit of these applications for learning	11.8%	88.2%	100.0%
	% within Gender	<b>10.8%</b>	<b>29.1%</b>	24.3%
	% of Total	2.9%	21.4%	24.3%
Total	Count	37	103	140
	% within Lack of awareness of benefit of these applications for learning	26.4%	73.6%	100%
	% within Gender	100%	100%	100%
	% of Total	26.4%	73.6%	100%

Table 6.26 A. Chi-Square Tests ‘Gender’ versus ‘Social Bookmarking’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.287 <sup>a</sup>	4	.036
Likelihood Ratio	9.694	4	.046
Linear-by-Linear Association	6.379	1	.012
N of Valid Cases	142		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.94.

Table 6.26 B. Cross-Tabulation ‘Gender’ versus ‘Social Bookmarking’

		Gender		Total	
		Male	Female		
Social Bookmarking (e.g., delicious)	Not heard of it	Count	11	49	60
		% within Social Bookmarking	18.3%	<b>81.7%</b>	100.0%
		% within Gender	<b>28.9%</b>	<b>47.1%</b>	42.3%
		% of Total	7.7%	34.5%	42.3%
	Know about it, but don’t do it	Count	4	18	22
		% within Social Bookmarking	<b>18.2%</b>	<b>81.8%</b>	100.0%
		% within Gender	10.5%	17.3%	15.5%
		% of Total	2.8%	12.7%	15.5%
	Have done it, but don’t anymore	Count	8	10	18
		% within Social Bookmarking	44.4%	55.6%	100.0%
		% within Gender	<b>21.1%</b>	<b>9.6%</b>	12.7%
		% of Total	5.6%	7.0%	12.7%
	Do it, but it is not a major aspect of my internet use	Count	9	22	31
		% within Social Bookmarking	29.0%	71.0%	100.0%
		% within Gender	23.7%	21.2%	21.8%
		% of Total	6.3%	15.5%	21.8%
Do it, and it is a major part of using the internet	Count	6	5	11	
	% within Social Bookmarking	54.5%	45.5%	100.0%	
	% within Gender	15.8%	4.8%	7.7%	
	% of Total	4.2%	3.5%	7.7%	
Total		Count	38	104	142
		% within Social Bookmarking	26.8%	73.2%	100.0%
		% within Gender	100	100	100%
		% of Total	26.8%	73.2%	100.0%

Table 6.27 A. Chi-Square Tests ‘Gender’ versus ‘Using Discussion Forums’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.921 <sup>a</sup>	4	.042
Likelihood Ratio	10.188	4	.037
Linear-by-Linear Association	.000	1	.994
N of Valid Cases	142		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 2.41.

Table 6.28 A. Chi-Square Tests ‘Gender’ versus ‘Facebook’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.349 <sup>a</sup>	4	.000
Likelihood Ratio	21.509	4	.000
Linear-by-Linear Association	5.837	1	.016
N of Valid Cases	142		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .80.

Table 6.29 A. Chi-Square Tests ‘Gender’ versus ‘YouTube’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.825 <sup>a</sup>	3	.020
Likelihood Ratio	9.835	3	.020
Linear-by-Linear Association	.095	1	.757
N of Valid Cases	142		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.07.

Table 6.30 A. Chi-Square Tests ‘Gender’ versus ‘Twitter’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.951 <sup>a</sup>	4	.001
Likelihood Ratio	17.464	4	.002
Linear-by-Linear Association	.009	1	.925
N of Valid Cases	142		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.34.

Table 6.30 B. Cross-Tabulation ‘Gender’ versus ‘Twitter’

			Gender		Total
			Male	Female	
Twitter	Not heard of it	Count	5	0	5
		% within Twitter	100.0%	0.0%	100.0%
		% within Gender	13.2%	0.0%	3.5%
		% of Total	3.5%	0.0%	3.5%
	Know about it, but don’t do it	Count	16	67	83
		% within Twitter	19.3%	80.7%	100.0%
		% within Gender	<b>42.1%</b>	<b>64.4%</b>	58.5%
		% of Total	11.3%	47.2%	58.5%
	Have done it, but don’t anymore	Count	7	10	17
		% within Twitter	41.2%	58.8%	100.0%
		% within Gender	18.4%	9.6%	12.0%
		% of Total	4.9%	7.0%	12.0%
	Do it, but it is not a major aspect of my internet use	Count	5	15	20
		% within Twitter	25.0%	75.0%	100.0%
		% within Gender	13.2%	14.4%	14.1%
		% of Total	3.5%	10.6%	14.1%
Do it, and it is a major part of using the internet	Count	5	12	17	
	% within Twitter	29.4%	70.6%	100.0%	
	% within Gender	13.2%	11.5%	12.0%	
	% of Total	3.5%	8.5%	12.0%	
Total		Count	38	104	142
		% within Twitter	26.8%	73.2%	100.0%
		% within Gender	100.0%	100.0%	100.0%
		% of Total	26.8%	73.2%	100.0%

Table 6.31 A. Chi-Square Tests ‘Gender’ versus ‘LinkedIn’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.715 <sup>a</sup>	4	.020
Likelihood Ratio	10.837	4	.028
Linear-by-Linear Association	9.688	1	.002
N of Valid Cases	142		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 2.14.



Table 6.31 B. Cross-Tabulation ‘Gender’ versus ‘LinkedIn’

			Gender		Total
			Male	Female	
LinkedIn	Not heard of it	Count	13	60	73
		% within LinkedIn	<b>17.8%</b>	<b>82.2%</b>	100.0%
		% within Gender	<b>34.2%</b>	<b>57.7%</b>	51.4%
		% of Total	9.2%	42.3%	51.4%
	Know about it, but don’t do it	Count	11	29	40
		% within LinkedIn	27.5%	72.5%	100.0%
		% within Gender	28.9%	27.9%	28.2%
		% of Total	7.7%	20.4%	28.2%
	Have done it, but don’t anymore	Count	6	6	12
		% within LinkedIn	50.0%	50.0%	100.0%
		% within Gender	15.8%	5.8%	8.5%
		% of Total	4.2%	4.2%	8.5%
	Do it, but it is not a major aspect of my internet use	Count	3	6	9
		% within LinkedIn	33.3%	66.7%	100.0%
		% within Gender	7.9%	5.8%	6.3%
		% of Total	2.1%	4.2%	6.3%
Do it, and it is a major part of using the internet	Count	5	3	8	
	% within LinkedIn	62.5%	37.5%	100.0%	
	% within Gender	<b>13.2%</b>	<b>2.9%</b>	5.6%	
	% of Total	3.5%	2.1%	5.6%	
Total		Count	38	104	142
		% within LinkedIn	26.8%	73.2%	100.0%
		% within Gender	100.0%	100.0%	100.0%
		% of Total	26.8%	73.2%	100.0%

Table 6.32 A. Chi-Square Tests ‘Gender’ versus ‘Academia.edu’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.770 <sup>a</sup>	4	.003
Likelihood Ratio	15.121	4	.004
Linear-by-Linear Association	11.225	1	.001
N of Valid Cases	142		
a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 2.14.			

Table 6.32 B. Cross-Tabulation ‘Gender’ versus ‘Academia.edu’

			Gender		Total
			Male	Female	
Academia.edu	Not heard of it	Count	11	63	74
		% within Academia.edu	<b>14.9%</b>	<b>85.1%</b>	100.0%
		% within Gender	<b>28.9%</b>	<b>60.6%</b>	52.1%
		% of Total	7.7%	44.4%	52.1%
	Know about it, but don’t do it	Count	13	28	41
		% within Academia.edu	31.7%	68.3%	100.0%
		% within Gender	34.2%	26.9%	28.9%
		% of Total	9.2%	19.7%	28.9%
	Have done it, but don’t anymore	Count	5	4	9
		% within Academia.edu	55.6%	44.4%	100.0%
		% within Gender	13.2%	3.8%	6.3%
		% of Total	3.5%	2.8%	6.3%
	Do it, but it is not a major aspect of my	Count	6	4	10
		% within Academia.edu	60.0%	40.0%	100.0%
		% within Gender	15.8%	3.8%	7.0%

	internet use	% of Total	4.2%	2.8%	7.0%
	Do it, and it is a major part of using the internet	Count	3	5	8
		% within Academia.edu	37.5%	62.5%	100.0%
		% within Gender	7.9%	4.8%	5.6%
Total		% of Total	2.1%	3.5%	5.6%
		Count	38	104	142
		% within Academia.edu	26.8%	73.2%	100.0%
		% within Gender	100.0%	100.0%	100.0%
		% of Total	26.8%	73.2%	100.0%

Table 6.33 A. Chi-Square Tests ‘Gender’ versus ‘Use the internet for social networking (e.g., Facebook and MySpace)’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.425 <sup>a</sup>	4	.022
Likelihood Ratio	11.227	4	.024
Linear-by-Linear Association	5.654	1	.017
N of Valid Cases	142		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.35.

Table 6.34 A. Chi-Square Tests “Gender” versus ‘Use of the internet for making and sharing resources with others’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.559 <sup>a</sup>	4	.009
Likelihood Ratio	18.762	4	.001
Linear-by-Linear Association	6.281	1	.012
N of Valid Cases	142		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.75.

Table 6.34 B. Cross-tabulation ‘Gender’ versus ‘Use the internet for making and sharing resources with others’

Use the internet for resources making and sharing with others (e.g., delicious, wikis and blogs)		Gender		Total
		Male	Female	
Never use	Count	0	22	22
	% within Use the internet for resources making and sharing with others	0.0%	100.0%	100.0%
	% within Gender	<b>0.0%</b>	<b>21.2%</b>	15.5%
	% of Total	0.0%	15.5%	15.5%
Occasionally	Count	17	41	58
	% within Use the internet for resources making and sharing with others	29.3%	70.7%	100.0%
	% within Gender	44.7%	39.4%	40.8%
	% of Total	12.0%	28.9%	40.8%
Sometimes	Count	11	21	32
	% within Use the internet for resources making and sharing with others	34.4%	65.6%	100.0%
	% within Gender	28.9%	20.2%	22.5%
	% of Total	7.7%	14.8%	22.5%
Often	Count	3	13	16
	% within Use the internet for resources making and sharing with others	18.8%	81.2%	100.0%
	% within Gender	7.9%	12.5%	11.3%

	% of Total	2.1%	9.2%	11.3%
Very Often	Count	7	7	14
	% within Use the internet for resources making and sharing with others	50.0%	50.0%	100.0%
	% within Gender	18.4%	6.7%	9.9%
	% of Total	4.9%	4.9%	9.9%
Total	Count	38	104	142
	% within Use the internet for resources making and sharing with others	26.8%	73.2%	100.0%
	% within Gender	100%	100%	100%
	% of Total	26.8%	73.2%	100.0%

Table 6.35 A. Chi-Square Tests ‘Gender’ versus ‘Use the internet in the collaboration of ideas’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.014 <sup>a</sup>	4	.003
Likelihood Ratio	15.380	4	.004
Linear-by-Linear Association	10.742	1	.001
N of Valid Cases	142		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.41.

Table 6.36 A. Chi-Square Tests ‘Gender’ versus ‘Using Facebook to communicate with and collaborate on ideas with others’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.473 <sup>a</sup>	4	.022
Likelihood Ratio	11.600	4	.021
Linear-by-Linear Association	9.955	1	.002
N of Valid Cases	142		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.35.

Table 6.37 A. Chi-Square Tests ‘Gender’ versus ‘Using Twitter for finding and following people and activities’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.046 <sup>a</sup>	4	.026
Likelihood Ratio	10.551	4	.032
Linear-by-Linear Association	2.806	1	.094
N of Valid Cases	142		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 3.21.

Table 6.37 B. Cross-Tabulation ‘Gender’ versus ‘Using Twitter for finding and following people and activities’

Using Twitter for finding and following people activities		Gender		Total
		Male	Female	
Never use	Count	14	66	80
	% within Using Twitter for finding and following people activities	17.5%	82.5%	100.0%
	% within Gender	<b>36.8%</b>	<b>63.5%</b>	56.3%
	% of Total	9.9%	46.5%	56.3%
Occasionally	Count	10	10	20
	% within Using Twitter for finding and	50.0%	50.0%	100.0%

	following people activities			%
	% within Gender	26.3%	9.6%	14.1%
	% of Total	7.0%	7.0%	14.1%
Sometimes	Count	5	11	16
	% within Using Twitter for finding and following people activities	31.2%	68.8%	100.0%
	% within Gender	13.2%	10.6%	11.3%
	% of Total	3.5%	7.7%	11.3%
Often	Count	6	8	14
	% within Using Twitter for finding and following people activities	42.9%	57.1%	100.0%
	% within Gender	15.8%	7.7%	9.9%
	% of Total	4.2%	5.6%	9.9%
Very Often	Count	3	9	12
	% within Using Twitter for finding and following people activities	25.0%	75.0%	100.0%
	% within Gender	7.9%	8.7%	8.5%
	% of Total	2.1%	6.3%	8.5%
Count		38	104	142
% within Using Twitter for finding and following people activities		26.8%	73.2%	100%
% within Gender		100%	100%	100%
% of Total		26.8%	73.2%	100%

Table 6.38 A. Chi-Square Tests ‘Gender’ versus ‘Use the web for instant messaging/chat’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.234 <sup>a</sup>	4	.001
Likelihood Ratio	23.614	4	.000
Linear-by-Linear Association	11.900	1	.001
N of Valid Cases	142		
a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.28.			

Table 6.39 A. Chi-Square Tests ‘Gender’ versus ‘Use the internet for social networking’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.618 <sup>a</sup>	4	.001
Likelihood Ratio	19.287	4	.001
Linear-by-Linear Association	11.590	1	.001
N of Valid Cases	142		
a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.28.			

Table 6.40 A. Chi-Square Tests ‘Gender’ versus ‘Use the internet for contributing and developing content’

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.671 <sup>a</sup>	4	.031
Likelihood Ratio	11.928	4	.018
Linear-by-Linear Association	6.302	1	.012
N of Valid Cases	142		
a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.34.			

Table 6.41 A. Chi-Square Tests ‘Gender’ versus ‘Use the internet for the collaboration of ideas’

	<b>Value</b>	<b>df</b>	<b>Asymp. Sig. (2-sided)</b>
Pearson Chi-Square	11.838 <sup>a</sup>	4	.019
Likelihood Ratio	13.012	4	.011
Linear-by-Linear Association	10.714	1	.001
N of Valid Cases	142		
a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 2.14.			

Table 6.42 A. Chi-Square Tests ‘Gender’ versus ‘Using Facebook to communicate and collaborate on ideas with others’

	<b>Value</b>	<b>df</b>	<b>Asymp. Sig. (2-sided)</b>
Pearson Chi-Square	15.584 <sup>a</sup>	4	.004
Likelihood Ratio	15.625	4	.004
Linear-by-Linear Association	15.082	1	.000
N of Valid Cases	142		
a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.48.			

## Appendix H Supplement: Bivariate Correlation, Spearman Tests

Table 6.50 B. Spearman's rho Correlations 'Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)', Personal versus Learning Activities

			Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)
Spearman's rho	Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	Correlation Coefficient	1.000	.714**
		Sig. (2-tailed)	.	.000
		N	142	142
	Use the web to send or receive email (e.g., Hotmail, Yahoo, Gmail)	Correlation Coefficient	.714**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.50 C. Spearman's rho Correlations 'Use the web for instant messaging/chat (e.g., MSN)', Personal versus Learning Activities

			Use the web for instant messaging/chat (e.g., MSN)	Use the web for instant messaging/chat (e.g., MSN)
Spearman's rho	Use the web for instant messaging/chat	Correlation Coefficient	1.000	.620**
		Sig. (2-tailed)	.	.000
		N	142	142
	Use the web for instant messaging/chat	Correlation Coefficient	.620**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.50 D. Spearman's rho Correlations 'Use the internet for social networking (e.g., Facebook and MySpace)', Personal versus Learning Activities

			Use the internet for social networking (e.g., Facebook and MySpace)	Use the internet for social networking (e.g., Facebook and MySpace)
Spearman's rho	Use the internet for social networking (e.g., Facebook and MySpace)	Correlation Coefficient	1.000	.670**
		Sig. (2-tailed)	.	.000
		N	142	142
	Use the internet for social networking (e.g., Facebook and MySpace)	Correlation Coefficient	.670**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.50 E. Spearman's rho Correlations 'Use the internet for sharing photographs or/and digital materials (e.g., Flickr)', Personal versus Learning Activities

			Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	Use the internet for sharing photographs or/and digital materials (e.g., Flickr)
Spearman's rho	Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	Correlation Coefficient	1.000	.666**
		Sig. (2-tailed)	.	.000
		N	142	142
	Use the internet for sharing photographs or/and digital materials (e.g., Flickr)	Correlation Coefficient	.666**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 6.50 F. Spearman's rho Correlations 'Use the internet for resources making and sharing with other (e.g., delicious, wikis and blogs)', Personal versus Learning Activities

			Use the internet for resources making and sharing with others (e.g., delicious, wikis and blogs)	Use the internet for resources making and sharing with other (e.g., delicious, wikis and blogs)
Spearman's rho	Use the internet for resources making and sharing with others	Correlation Coefficient	1.000	.593**
		Sig. (2-tailed)	.	.000
		N	142	142
	Use the internet for resources making and sharing with other	Correlation Coefficient	.593**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 6.50 G. Spearman's rho Correlations 'Use the internet for watching/sharing video (e.g., YouTube)', Personal versus Learning Activities

			Use the internet for watching/sharing video (e.g., YouTube)	Use the internet for watching/sharing video (e.g., YouTube)
Spearman's rho	Use the internet for watching/sharing video (e.g., YouTube)	Correlation Coefficient	1.000	.544**
		Sig. (2-tailed)	.	.000
		N	142	142
	Use the internet for watching/sharing video (e.g., YouTube)	Correlation Coefficient	.544**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 6.50 H. Spearman's rho Correlations 'Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)', Personal versus Learning Activities

			Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)
Spearman's rho	Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	Correlation Coefficient	1.000	.613**
		Sig. (2-tailed)	.	.000
		N	142	142
	Use the internet for contributing and developing content (e.g., wikis, Wikipedia, blogs)	Correlation Coefficient	.613**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.50 I. Spearman's rho Correlations 'Use the internet in collaborating in ideas (e.g., wikis and blogs)', Personal versus Learning Activities

			Use the internet in collaborating in ideas (e.g., wikis and blogs)	Use the internet in collaborating in ideas (e.g., wikis and blogs)
Spearman's rho	Use the internet in collaborating in ideas (e.g., wikis and blogs)	Correlation Coefficient	1.000	.613**
		Sig. (2-tailed)	.	.000
		N	142	142
	Use the internet in collaborating in ideas (e.g., wikis and blogs)	Correlation Coefficient	.613**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.50 J. Spearman's rho Correlations 'Using Facebook to communicate with and collaborate in ideas with others', Personal versus Learning Activities

			Using Facebook to communicate with and collaborate in ideas with others	Using Facebook to communicate with and collaborate in ideas with others
Spearman's rho	Using Facebook to communicate with and collaborate in ideas with others	Correlation Coefficient	1.000	.761**
		Sig. (2-tailed)	.	.000
		N	142	142
	Using Facebook to communicate with and collaborate in ideas with others	Correlation Coefficient	.761**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142

\*\* . Correlation is significant at the 0.01 level (2-tailed).



Table 6.50 K. Spearman's rho Correlations 'Using Twitter for finding and following people activities', Personal versus Learning Activities

			Using Twitter for finding and following people activities	Using Twitter for finding and following people activities
Spearman's rho	Using Twitter for finding and following people activities	Correlation Coefficient	1.000	.656**
		Sig. (2-tailed)	.	.000
		N	142	142
	Using Twitter for finding and following people activities	Correlation Coefficient	.656**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.50 L. Spearman's rho Correlations 'Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)', Personal versus Learning Activities

			Using Academia.edu or/and LinkedIn for collaboration	Using Academia.edu or/and LinkedIn for collaboration
Spearman's rho	Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)	Correlation Coefficient	1.000	.631**
		Sig. (2-tailed)	.	.000
		N	142	142
	Using Academia.edu or/and LinkedIn for collaboration (e.g., follow latest research in my field, updating, communicate with other professionals in my field)	Correlation Coefficient	.631**	1.000
		Sig. (2-tailed)	.000	.
		N	142	142

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.51 B. Bivariate correlation 'Using various internet applications makes me competitive in seeking employment' versus 'Using various internet applications would make me competitive in seeking employment'

			Using various internet applications makes me competitive in seeking employment	Using various internet applications would make me competitive in seeking employment
Spearman's rho	Using various internet applications makes me competitive in seeking employment	Correlation Coefficient	1.000	.497**
		Sig. (2-tailed)	.	.000
		N	140	140
	Using various internet applications would make me competitive in seeking employment	Correlation Coefficient	.497**	1.000
		Sig. (2-tailed)	.000	.
		N	140	140

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.51 C. Bivariate correlation ‘YouTube supports my understanding of IS field’ versus ‘YouTube would support my understanding of IS field’

			YouTube supports my understanding of IS field	YouTube would support my understanding of IS field
Spearman's rho	YouTube supports my understanding of IS field	Correlation Coefficient	1.000	.548**
		Sig. (2-tailed)	.	.000
		N	140	140
	YouTube would support my understanding of IS field	Correlation Coefficient	.548**	1.000
		Sig. (2-tailed)	.000	.
		N	140	140

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.51 D. Bivariate correlation ‘Facebook facilitates my collaboration with others’ versus ‘Facebook would facilitate my collaboration with others’

			Facebook facilitates my collaboration with others	Facebook would facilitate my collaboration with others
Spearman's rho	Facebook facilitates my collaboration with others	Correlation Coefficient	1.000	.547**
		Sig. (2-tailed)	.	.000
		N	140	140
	Facebook would facilitate my collaboration with others	Correlation Coefficient	.547**	1.000
		Sig. (2-tailed)	.000	.
		N	140	140

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.51 E. Bivariate correlation ‘Twitter helps me to collaborate with others by following and finding other people activities’ versus ‘Twitter would help me to collaborate with others by following and finding other people activities’

			Twitter helps me to collaborate with others by following and finding other people activities	Twitter would help me to collaborate with others by following and finding other people activities
Spearman's rho	Twitter helps me to collaborate with others by following and finding other people activities	Correlation Coefficient	1.000	.502**
		Sig. (2-tailed)	.	.000
		N	140	140
	Twitter would help me to collaborate with others by following and finding other people activities	Correlation Coefficient	.502**	1.000
		Sig. (2-tailed)	.000	.
		N	140	140

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.51 F. Bivariate correlation ‘LinkedIn and/or Academia.edu enable me to learn more through collaboration with others’ versus ‘LinkedIn and/or Academia.edu would enable me to learn more through collaboration with others.’

			LinkedIn and/or Academia.edu enable me to learn more through collaboration with others.	LinkedIn and/or Academia.edu would enable me to learn more through collaboration with others.
Spearman's rho	LinkedIn and/or Academia.edu enable me to learn more through collaboration with others.	Correlation Coefficient	1.000	.663**
		Sig. (2-tailed)	.	.000
		N	140	140
	LinkedIn and/or Academia.edu would enable me to learn more through collaboration with others.	Correlation Coefficient	.663**	1.000
		Sig. (2-tailed)	.000	.
		N	140	140

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.51 G. Bivariate correlation ‘Overall, using various internet applications allows me to prepare myself in future job market’ versus ‘Overall, using various internet applications would allow me to survival in job market’

			Overall, using various internet applications allows me to prepare myself in future job market.	Overall, using various internet applications would allow me to survival in job market.
Spearman's rho	Overall, using various internet applications allows me to prepare myself in future job market.	Correlation Coefficient	1.000	.427**
		Sig. (2-tailed)	.	.000
		N	140	140
	Overall, using various internet applications would allow me to survival in job market.	Correlation Coefficient	.427**	1.000
		Sig. (2-tailed)	.000	.
		N	140	140

\*\* . Correlation is significant at the 0.01 level (2-tailed).