

**Faculty of Humanities**

**The Impact of Social Media as an Integral Communication Tool  
for Building Effective Teams**

**Muhammad Adnan**

**0000-0001-5261-693X**

**This thesis is presented for the Degree of  
Master of Philosophy Media, Culture and Creative Arts  
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## **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.

Signed by:

Muhammad Adnan

28 June 2021

## **DECLARATION OF ETHICS**

Human Ethics (For projects involving human participants/tissue, etc.) The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee, Approval Number HRE2018-0601.

Signed by:

Muhammad Adnan

28 June 2021

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## **ABSTRACT**

With the advent of the internet and its easy and widespread availability to people, many websites, portals, and online networks have emerged for facilitating communication and information access. Social media is one such online tool that allows efficient communication and exchange of information. The existing body of literature confirms the widespread use of social media in many fields, including business, health, commerce, and education. Elaborating on the use of social media in education, research studies reveal that social media is used both by teachers and students for communication purposes (Kot et al., 2017). However, not many studies have explicitly focused on social media as a communication tool by students within team-based tasks to achieve academic goals, for maintaining good team relations, and to ensure a better focus on the given task through goal reinforcement. The current study aims to investigate the use of social media as a communication tool by students, applied within team-based assignments using a quantitative empirical approach. Student participants from three international universities across Malaysia form the study participants. Data was collected using convenient sampling, which was then examined using correlation and descriptive analysis.

The results of the study revealed a positive correlation between social media and student learning in terms of the use of social media as a tool for achieving academic goals. The results show that social media has positive impacts in terms of relationship management for building effective teams for student learning. However, a negative correlation was observed between social media and goals reinforcement.

In terms of the theoretical implications of the current study, this study is unique as it is placed within a framework of a combination of social theories, communication theory, and a digital tool, by drawing on different postulates of these theories. From the methodological perspective, the study is in line with a number of other researches within the discipline of social science. However, the way the researcher has utilized the combination of these theories in the current study is unique and suits the needs of the this

research. The practical implications of the study suggest that social media be utilized as a learning and goals achieving tool by students, as well as a tool to create effective teams within team-based tasks. The current study is bound by some limitations that include limited sample size, time, and budget.

***Keywords:*** Communication, digital mediated learning, effective teams, social media, student learning, and relationship management.

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Chapter Overview**

This chapter presents background information on how the need for the current research study has arisen. The chapter comprises of research sections including research objectives, research questions, scope, significance and limitations of the study, and operational definitions. A brief conclusion of the chapter follows these sections.

### **1.2 Background of the Research**

The trends in communication have been going through a process of evolution, improvement, and novelty. Besides interaction, communication has an essential role in the teaching and learning process both individually and within teams (Verderber, Verderber, & Sellnow, 2013). For teams, communication has always served as a crucial element for team management and a large body of data supports the premise (Firat, Altinpulluk, Kiliñ, & Büyük, 2017). Email (electronic mails) systems have been among the most widely used source of virtual communication (Snider, Škec, Gopsill, & Hicks, 2017), until recently when social media took dominance over communications. Learners and teachers, working both individually and within teams, benefit from the social media sources (Bell, 2009). However, a recent change in virtual communication trend witnesses the use of social media by students to increase their learning or academic performance (W. Al-Rahmi, Othman, & Yusuf, 2015). Likewise, social media can also help in creating effective teams owing to provision of opportunities such as creativity, feedback and sharing of opinion (Firat et al., 2017).

### **1.3 Social Media**

Social media has seen an incredible surge in its use within the past six years or so (C. Evans, 2014). Facebook usage was reported to have seen an extraordinary rise between 2012 and 2017; from about 1000 million to 2300 million users. Likewise, the use of Twitter accounts also grew considerably during these years, from 138 million in 2012, to about 330 million in 2017 (W. M. Al-Rahmi, Alias, Othman, Marin, & Tur, 2018). Among other uses, social media serve the purpose of binding together teams.

In current times, social media applications are indeed useful communication tools. The use of social media technologies refers to usage in our daily routine, education, communication, and business. Some companies and organizations use social media for various purposes, i.e., connecting people or disseminating knowledge management (Levy, 2013). Using social media in education has the potential to bring a number of benefits to students. For example, as a communication medium outside of the classroom setting, social media can assist students in staying connected with formal education and have direct communication avenues with teachers. Similarly, as a communication medium within the classroom, social media has the potential to improve learning experiences, learning performance and motivation to learn. Social media can improve the learning engagement and outcomes for students by posting and sharing relevant material in classrooms (Al-Bahrani & Patel, 2015). However, limited data is available on how social media may be helpful in relationship management within an educational setup (Thomas, Briggs, Hart, & Kerrigan, 2017).

This section discusses the use of three social media applications, i.e. Twitter, Facebook, and Instagram. These applications are used by everyone now a days. Irrespective of background or level of education, people are regular users of these popular social media applications.

### **1.3.1 Twitter**

Technological developments brought changes in trends of using communication mediums. Studies have been conducted for social media technologies and their effectiveness. Twitter is a central social media platform that developed rapidly and grabbed the attention of users, especially students (Finn, Brown, Laughey, & Dueñas, 2020). Social media tools like Twitter help in performing educational tasks in classrooms (Ebner, Lienhardt, Rohs, & Meyer, 2010). Researchers found a positive correlation between the use of social media and student relationship building (Junco, Heiberger, & Loken, 2011). Using Twitter, people interact with each other, share their ideas, thoughts, and virtual content including videos, images, news, and other digital content. It is considered an excellent and friendly source of communication for users. According to Al-Bahrani and Patel (2015), Twitter can be easily accessed using a mobile phone or computer over the internet. There are significant number of users, about 76%, who use their mobiles to access Twitter (Al-Bahrani & Patel, 2015). The above statistic shows that accessing Twitter today is not difficult. A research study revealed the results that usage of Twitter has a strong relationship with student engagement as students using this tool were more active and engaged with university activities as well as their social and personal activities (C. Evans, 2014). This notion brings evidence that students become more social and engage themselves by sharing their thoughts and ideas by posts on Twitter. Engagement of students depends on how teachers or mentors deal with students using Twitter, as this social media application can be used as one way or two-way communication (Al-Bahrani & Patel, 2015). According to their findings, not every instructor needs to use Twitter as one-way communication because Twitter is more flexible as the user can turn on or off notifications using email or text. Thus, users have a choice to decide on the level of engagement they need.

### **1.3.2 Facebook**

Facebook has the highest number of users among social media applications. It allows users to share different types of media on the internet like images, videos, blog posts, web

content and live video streaming. This tool became very handy in the recent past because it is more user-friendly than other applications. The researchers are of the view that Facebook is more efficient and convenient for students if used as a learning tool (Al-Bahrani & Patel, 2015). Researchers believe that by using features of Facebook like groups and pages, LMS (Learning Management System) can be replaced (Al-Bahrani, Patel, & Sheridan, 2015). Facebook pages and groups let the users to have more privacy. Facebook became a platform for students to communicate with instructors without having many restrictions as compared to forums on websites.

The significant difference between forums, Facebook pages, and Facebook group is the approval process and privacy concern. For instance, study forums require a request from the student and upon receipt of relevant information the administrator approves the request, and student can have access to content. Whereas for Facebook pages and groups, the process is more flexible as students can like and get access to the content. Facebook is transformational, as it is changing patterns in every domain, for instance, education, business, and marketing sales. Social media applications like Facebook have changed the dimensions of sales and marketing as it has provided more opportunities and ways to market products online (Shen & Bissell, 2013).

### **1.3.3 Instagram**

With the use of social media applications, different users have different preferences. Some users prefer applications that allow text writing, while others prefer picture sharing applications. Instagram is one such application that allows its users to share pictures, videos, and other digital contents. Users today have set their choice for Instagram for more photos sharing. Every age group uses this social media application, but most prominent users are from young age groups. The use of this age group is more towards capturing pictures and sharing their experience with friends. Studies show that the number of Instagram users increased at an incredible pace in the recent past and is increasing day by day. The number of active monthly Instagram users is around 700 million, while active daily users are about 400 million (Ranginwala & Towbin, 2018). These statistics show

that it gained the attention of new users because it is user-friendly and provides privacy. In particular, privacy is an essential aspect of Instagram as it allows users to make their content private and exercise view restrictions for users.

Furthermore, DM (direct message) is also an excellent feature of Instagram for its users, and it enables us to have a private conversation. Instagram also has video sharing features that could be used for educational purposes by teachers; some teachers upload short videos containing study materials and information for students. Using the hashtag “#” feature further enables users to provide awareness to the viewers more effectively. It can also be helpful for students if teachers provide them with the relevant information in a few words using the hashtag.

## **1.4 Disadvantages of Social Media**

The use of social media applications as communication tools is considered to be a significant technological development presently. Although there are benefits of using social media for students’ learning and sharing information in the classroom, there are also a few drawbacks. Implementation of a virtual education structure that enables Social Networking Sites (SNS) that includes Twitter, Facebook and Instagram raise a few issues for teachers in the classroom. These issues include privacy concerns on information sharing, more time spent on phones, and other electronic gadgets, and sometimes distraction from studies.

**1.4.1 Information Overload:** Use of social media applications is helpful in our daily routines if used correctly and for specific times. By spending more time on such applications, the user usually visits different platforms for acquiring and sharing information. Access to the use of social media leads to information overload (Drahošová & Balco, 2017). This is especially true for students while using social media, and they become insecure in delivering ideas or information during school activities because of the authenticity concerns.

**1.4.2 Internet Addiction:** Ubiquitous access to social media applications and excessive use by adolescents and young adults can easily lead to addictive behavior. Research conducted on internet addiction in Malaysia revealed that internet addiction results in loss of concentration and productivity in students (Kapahi, Ling, Ramadass, & Abdullah, 2013). Research studies brought this notion in the light that today students are using mobile phones more than required. A research study conducted with students from the European Union found that 72.3% of participating students were addicted to the internet and social media applications (Drahošová & Balco, 2017). This finding is surprising and concerning. Al-Bahrani and Patel (2015) also found that students utilize more resources such as smartphones or computers, and that could cause addiction to the internet.

**1.4.3 Privacy Concern:** A significant disadvantage of using social media applications, such as Facebook, Twitter or Instagram is the concerns on privacy by the users. Different studies show similar results for privacy concerns. A study revealed that the majority of students used separate Twitter accounts for their journalism class (Shemberger & Wright, 2014). They were of the view that their private accounts are for friends and family, and they were comfortable with a different account for study purposes. Privacy concerns are not negligible, as a survey conducted in 2012 by Pearson in 2010, showed that nearly 70% teachers were of the view that using social media is very challenging regarding maintaining privacy over the internet (Moran, Seaman, & Tinti-Kane, 2011).

## **1.5 Social Media in Education**

In the last few years, education trends have been changing, as education providers are more focused on new strategies. Technology plays a significant role in the education sector. Since the emergence of social media, it is used as a tool for best practices in the education sector, and research on specific social media usage is ongoing. However, there is not much empirical data available on the influence of social media on education systems, or on how students manage their academic activities. Researchers are of the

opinion that social media applications are handy for students and teaching-learning. Whereas C. Evans (2014) narrates that there is not much influence of social media in education. (Bell, 2009) found that students and teachers using social media in their academic tasks are getting benefits from it. Ranginwala and Towbin (2018) also conducted a study on the use of different social media applications in radiology education. Whereas, change in the trend of using social media as a communication tool for the educational purpose witnessed improvement in learning and educational activities. Firat et al. (2017) are of the view that social media in education creates effective teams of students in academic tasks and help to make learning process efficient as students get opportunities to share their opinions, ideas and give feedback in a group.

Education systems work more efficiently when students are more engaged and directed to learning. In 1984, Alexander Astin proposed a developmental theory, in which he focused on college students and studied their involvement in academic activities. This “involvement” was later termed as “student engagement”. In his research, he defines engagement as “the amount of physical and psychological energy that the student devotes to the academic experience” (Astin, 1984 p. 297 ). Today, this engagement is defined as the investment of time and efforts by students and their academic activities in an educational system to achieve the outcome (Kuh, 2009). There is not much research done on the relationship between social media and student engagement. Few studies found a connection between engagement and the use of technology by students. The notion that students using technology are more likely to engage themselves in college and academic activities are being increasingly supported, which supports the idea that students using social media technology are more involved in educational activities (Vandeyar, 2020).

Junco et al. (2011) conducted a study and found that using Twitter for education has a positive effect on students’ engagement, and also the contact between students and the head of the faculty improved. Twitter, as a social media tool, is used in the education sector in most of the research conducted recently. For instance, Cohen and Duchan (2012), who studied Twitter as a supportive teaching tool, found that teachers and students chose Twitter as a learning space as well as for sharing information in their study domain. The

study shows that the use of Twitter demonstrates the effectiveness of social media in education for information exchange. According to Fox and Varadarajan (2011), students are actively engaging themselves in classrooms by using social media applications. Results show that such tools used by teachers create a good learning environment, improve student interaction, participation in class, and study discussion. From literature and discussions from previous research, it is evident that social media is a reliable communication tool that contributes towards educational structures efficiently for both students and teachers.

## **1.6 Trends in Use of Social Media in Malaysian Higher Education**

Social media use has changed in recent years as a result of developments in technology. Recent study revealed the use of the internet increased significantly in Malaysia, and the acceptance for social collaboration was perceived positively (Hafiz Zakaria, Watson, & Edwards, 2010). Among every age group, irrespective of status, these tools are used by people in the modern age. According to Hafiz Zakaria et al. (2010), Malaysian students have sufficient personal devices to use social media and technologies.

Social media technologies can be divided into seven different categories as “text-based, media sharing, social networking, mobile-based applications, virtual world and games, synchronous communications and conferencing applications and mash-ups” (See Yin Lim, Agostinho, Harper, & Chicharo, 2014). Malaysia is among one of the countries that show how social media influenced and transformed societies. In this particular research, the focus is the influence of social media on student learning and education.

According to See Yin Lim et al. (2014), not much research has been conducted on social media use in Malaysian higher education in terms of student learning and academic assistance. Lim et.al’s study supports that student could gain academic advantages by using social media applications. Alshuaibi, Alshuaibi, Shamsudin, and Arshad (2018) elucidate that limited studies have been carried out on social media use in Malaysian higher education. International higher education in Malaysia contributes to the country’s

economy considerably as an average international student spends 30,000 Malaysian Ringgit per annum (Almadhoun, Dominic, & Woon, 2011).

According to W. Al-Rahmi et al. (2015) the use of social media is very effective for student engagement and learning in Malaysian education. Furthermore, W. Al-Rahmi et al. (2015) supports the notion that social media applications improved the performance of Malaysian students in terms of collaborative learning. Aikman et al. (2016) found that Malaysia is considered as one of the top ten countries in terms of social media usage frequency. Alshuaibi et al. (2018) found that the main users of social media are between the ages of 18 to 25 years, which comprise college or university students. In a study conducted by (Balakrishnan, Teoh, Pourshafie, & Liew, 2017) the researchers found that Facebook is the most popular site among social media application users with approximately 75% users. Balakrishnan et al. (2017) also found that students use Facebook more than three times a day, and a significant number of students use this site for at least 60 minutes daily. Almadhoun et al. (2011) found that the medium of language used among Malaysian student for Facebook is English and Bahasa Malaysia, and that it helped to improve language skills. Another study on student learning in a collaborative environment showed that social media usage contributed to significant improvement in performance and satisfaction by students in Malaysian universities (W. M. Al-Rahmi et al., 2018). Malaysian students use social media mainly for their social interaction more than academic purposes, but the study also found that students' performance in Quran and hadith learning was significant (W. M. Al-Rahmi et al., 2018).

It is evident that there is not much data available regarding the use of social media applications in Malaysian higher education institutions. Students in this era are familiar with technologies, and higher education is in the process of change, and there is great potential for social media in educational engagements (See Yin Lim et al., 2014). Alshuaibi et al. (2018) are of the view that much work is needed in terms of research on social media for student engagement. Alshuaibi et al. (2018) also elaborate that it will bring effectiveness in strategies for higher education systems. Balakrishnan et al. (2017) found that students are aware of the use of such technologies for studies, so there must be

a platform for students' and teachers' interactions in Malaysian education institutes. Use of Facebook and blogs are recommended by (W. Al-Rahmi et al., 2015; Pomerantz, Hank, & Sugimoto, 2015) for educational purposes to make the learning process easy and convenient in Malaysian institutions.

In light of the above literature, it can be deduced that the social media use in education is effective for student learning in Malaysian institutes. According to Pomerantz et al. (2015), education institutions have their policies for social media use, i.e. information added in the handbooks for staff and students. However, institutes are not aware of rapid development in social media technologies, so policies are needed regarding its use for both teachers and students (Hafiz Zakaria et al., 2010; Pomerantz et al., 2015). According to Balakrishnan et al. (2017), education providers should work on the use and features of social media applications for student enhancement and make social media platforms more user-friendly. W. Al-Rahmi et al. (2015) recommend that research studies are needed for social media use among students and also other factors like collaborative learning and social media influence on academic performance in Malaysian higher education.

## **1.7 Research Problem**

The trend of higher education in Malaysia shows a high influx of international students. Currently, there are 130,110 international students from over 136 countries studying in Malaysia (Easyuni, 2020). According to Malaysia Higher Education blueprint 2015-2025, government is aiming to achieve a target of 250,000 international students by year 2025 (Freemalysiatoday, 2019).

In most universities, group tasks or team-based assignments and projects are incorporated to prepare students for the corporate world and for them to be able to be equipped with necessary team-work ethics and potential. For group and team assignments, students are required to work jointly on the assigned work or project. These teams comprise of students from various linguistic, social, ethnic, and cultural backgrounds. Due to such diversity and differences, it might be a challenge to create effective teams that can produce positive

learning outcomes. Therefore, there is a need to equip students with tools and communication strategies that can help them make effective teams to achieve better learning outcomes.

One of the significant aspects of building effective teams, is to have good relationship management among the team members. By interacting, communicating, accommodating, and keeping each member of the group equally informed and updated, effective team functioning can be ensured. When these effective teams are reminded and updated about their goals, they stay focused and motivated towards achieving the task goals, thereby achieving the learning outcomes. To achieve the objective of building effective team, social media may be seen as an effective tool of communication.

Studies have been carried out on the usage of applications of social media for communication, such as Facebook, Twitter, and Instagram, for learning (Al-Bahrani & Patel, 2015). Social media has also been studied as a tool used by students and teachers for communication. However, there is scarce data available on the impact of social media as a tool of communication on the success of team objectives. There also exists a very limited body of research about students using social media for learning purposes, such as using twitter according to one study (C. Evans, 2014). Research on the use of social media as a communication tool for building effective teams is almost silent. The idea that social media may be employed as a tool for relationship management also seems not studied well. Furthermore, neither has the concept of goals reinforcement been discussed in connection with social media nor in relation with achieving team objectives and better learning outcomes.

The significance of goal reinforcement and relationship management for building effective teams that can ensure goal achievement and positive learning outcomes is clear. This study is focused on investigating social media as an integral communication tool in building effective teams and achieving students' learning by achieving relationship management and goals reinforcement to fill the research gaps.

## **1.8 Research Objectives**

As discussed earlier, relationship management and goals reinforcement play a role in creating effective teams, goals achievement and in achieving students' learning. However, these aspects have either not been studied or only discussed minimally in previous research. In particular, social media influence on relationship management within teams and in relation with goals reinforcement has not been thoroughly studied. Research shows that goals reinforcement helps stay focused on the objectives outlined below, and relationship management allows better outcomes. The research also argues for social media as an effective and quick tool of communication that is timely and cost-effective. However, these ideas have been independently dealt with no major studies in the literature that view them working together.

The present research aims at examining the impact of a communication tool, such as social media, as an integral approach in creating teamwork efficiency and in achieving positive learning outcomes. While doing so, the research shall address the following objectives:

1. To examine the impact of social media as an integral communication tool in building effective teams in support of improved student learning engagement and learning outcomes.
2. To examine the impact of social media as an integral communication tool for relationship management in building effective teams in support of improved student learning engagement and learning outcomes.
3. To examine the impact of social media as an integral communication tool on goals reinforcement in building effective teams in support of improved student learning engagement and learning outcomes.

## **1.9 Research Questions**

Keeping in view the above research objectives, the following research questions need to be addressed:

1. What is the impact of social media as an integral communication tool in building effective teams in support of improved student learning engagement and learning outcomes?
2. How is social media as an integral communication tool making an impact on relationship management in building effective teams in support of improved student learning engagement and learning outcomes?
3. What are the ways in which social media, as an integral communication tool, is able to impact goal reinforcement in building effective teams in support of improved student learning engagement and learning outcomes?

### **1.10 Scope of the Study**

The scope of the current study is embedded in the extensive use of social media as an integral tool of communication for higher education (Osterrieder, 2013). The literature on the use of social media as a communication tool reveals that both students and teachers use social media applications including Facebook and Twitter (Davis et al., 2015; Gammon and McGranahan, 2015; Manca and Ranieri, 2016; Veletsianos et al., 2013). However, the use of social media for achieving team-based tasks and goals in universities for students' learning has not been studied well enough in the Malaysian context.

The body of literature on team-based tasks and that on the building of effective teams has shown the significance of relationship management for building effective teams (Molm, 1994; Neill, 2015). However, relationship management for building effective teams through the use of social media as an integral communication tool has not been studied extensively in the context of Malaysian higher education.

Goal reinforcement has been viewed as a constructive factor for the team-based task as it refers to focusing and reminding of the task (Colas, Sigaud, & Oudeyer, 2018). However, literature that discusses goal reinforcement as a concept, as well as literature that foregrounds the significance of goal reinforcement in goals achievement has not been much addressed. Consequently, achieving goal reinforcement as a factor for building an

effective team and student learning through the use of social media as an integral communication tool is not referenced well in the existing literature.

Lastly, studies have not thoroughly investigated the role of social media as an integral communication tool for achieving relationship management and goal reinforcement to build effective teams and student learning. The researcher did not come across any study that used the combination of Social Exchange Theory (SET), Communication Accommodation Theory (CAT) and Digitally Mediated Learning (DML) as learning theories to understand the phenomenon as examined in the present study.

### **1.11 Significance of the Study**

The existing literature concerning the impact/interference/use of social media on creating effective teams suggests that social media as a communication tool has a high potential to take over conventional communication tools (such as emails) in the future (Cardon & Marshall, 2015). Its use may prevail so much so that the organizations might have their social networks on corporate intranets (Cardon & Marshall, 2015) to develop one-stop-shop for all intra and inter-organizational/ institutional communication needs. This can help attain communicational equity among organizations or institutions.

In addition to this, there is surely a large amount of empirical data available on how people create social and friendship bonds with each other through social media as a tool of communication. However, there is limited data available on how people carry out relationship management within teamwork in teaching (Thomas et al., 2017). Also, the influence of social media in education is largely unknown (C. Evans, 2014). There is not much data available empirically as to how social media influences teaching or how students employ it within their learning and education-related tasks. There is not much research either concentrated on how social media as a communication tool can influence team effectiveness (Henttonen, Johanson, & Janhonen, 2014).

This study can help the higher education sector in Malaysia to view social media as a support tool that can help students improve their learning engagement and learning

outcomes. It may prove to bring forth social media as a tool that helps form better teams and effective teamwork, which is otherwise primarily used for entertainment or friendship purposes. The study also favors teamwork, a much-needed attitude, in the contemporary world of technology and the internet by promoting teamwork using social media.

### **1.12 Limitation of the Study**

Similar to other researches, the current study has some limitations. Given the cost and time constraints, the current study could only focus on three private universities, Curtin University Malaysia, Swinburne University Malaysia, and Monash University Malaysia, across Malaysia. However, according to Malaysia Higher Education 2019 there are 20 public and 41 private universities in different parts of Malaysia. As a result, the collected data from these universities is sufficient enough to provide a snapshot of current practices, in three private universities. Data was collected over 40 days according to the availability of participants on campus during study semesters. However, the findings are not generalizable for overall universities or higher education institutions across Malaysia. Moreover, the study focused on undergraduate level students in the three universities. It needs to be acknowledged that it is possible that postgraduate students may utilize different learning approach and respond differently to the study questions. Also, the study has not investigated other factors that may affect participants' responses, such as gender, socio-cultural background, ethnicity, and linguistic background.

### **1.13 Operational Definitions**

- **Digitally Mediated Learning (DML)**

Digitally mediated learning (DML) is learning through the use of digital tools such as Social Networking Sites (SNS) (LeNoue, Hall, & Eighmy, 2011), or Learning Management System (LMS). For the current study, Digitally Mediated Learning (DML) is learning by the use of digital tools of social media applications such as Facebook, WhatsApp, and Twitter. (Al-Shdayfat, 2018).

- **Communication Tool**

Communication refers to exchanging information, among others in the form of speech, writing, or any other movement made (Verderber et al., 2013). In the current research, communication tools refer to the tools, mediums, or means using which we can communicate. The research particularly deals with virtual or technological tools of communication (Osterrieder, 2013), i.e. communication applications and software (Harris, Moreland-Russell, Tabak, Ruhr, & Maier, 2014; Joo & Teng, 2017).

- **Student Learning**

Student learning is a broad term that encompasses many things such as institutions, learning content, teachers, and ways of learning. The meaning and aspect of student learning, as followed in the research at hand, refers to the act of achieving learning goals that include team-based learning and teamwork (Kot, Tan, & Dragolea, 2017).

- **Goal Reinforcement**

Reinforcement is repeating or reminding of a certain idea or a certain act. In the context of this research study, reinforcement is that of goals for student learning in team-based tasks (Huber, Goldsmith, and Mogilner (2008). Goal reinforcement for the current study means reminding of the target or goal that is to be achieved to create a focus on the achievement of a goal (Colas, Sigaud, & Oudeyer, 2018).

- **Effective Teams**

Effective teams mean teams that have the potential to achieve the set targets or goals. In terms of the current study, effective teams are the ones that have good communication and that have good relationship management among them. In other words, good communication and relationship management create effective teams (Molm, 1994; Neill, 2015).

- **Social Media**

Social media is a digital tool of communication (Osterrieder, 2013). However, there are other tools of digital communication, such as email, and social networking sites. However, social media includes the tools that are open to being viewed by others as they allow an option to grant access to people we want (Gruzd, Haythornthwaite, Paulin, Gilbert, & del Valle, 2018). In the current study, social media means communication tools, including Facebook, WhatsApp, Twitter, and LinkedIn. (Al-Shdayfat, 2018).

- **Relationship Management**

Relationship management, as evident from the term itself, means creating good relations. In the present study, relationship management means creating and maintaining good relations among members of a team (Henttonen et al., 2014). In the context of the current study, relationship management encompasses good communication, equality, and behavior accommodation in the team.

## **1.14 Organization of the Study**

The current study has been divided into six chapters. Each chapter has a specific focus and contributes towards achieving the research objectives. The organization of these chapters is as follows.

### **Chapter 1: Introduction**

The first chapter is comprised of a firsthand background of the study and how the researcher built on the background to take the endeavor of conducting this study. The chapter also reveals the following: research problem, research objectives, research questions, scope, significance and limitations of the study, and operational definitions.

### **Chapter 2: Literature Review**

The second chapter sheds light on the previous literature in the fields of social media as a tool of communication, relationship management, goals reinforcement, building effective

teams and student learning. By delving into the body of literature, the study seeks to explore if social media as an integral communication tool can help achieve relationship management and goal reinforcement for building effective teams and for students' learning.

### **Chapter 3: Theoretical Framework**

The focus of the third chapter is to describe the development of a conceptual framework that can be applied to conduct the current research and to analyze the collected data. In doing so, the chapter also introduces and evaluates specific theories, which are used in the current study. The evaluation of the literature provided the basis for the development of the hypotheses of this study.

### **Chapter 4: Research Methodology**

The fourth chapter discusses the research design and research method used for data collection, in order to complete the present study. It also discusses correlation tests and descriptive analysis applied to the collected data as well as the ethical considerations involved in the study.

### **Chapter 5: Data Analysis**

The fifth chapter is focused on the analysis of the collected data and presents the following: a pilot study, results of data, main survey, normality test, reliability, correlation analysis and correlation results.

### **Chapter 6: Discussion and Conclusion**

The sixth and the last chapter discusses the results yielded from correlation analysis and hypotheses testing, and discusses which hypotheses can help answer the research questions of this study by telling which hypotheses have been accepted or rejected. The

chapter also answers the research questions of the current research in the light of hypotheses discussion and concludes the study with an overall conclusion.

### **1.15 Conclusion of the Chapter**

This chapter has given an overview of the study and how the thesis will be organized. It has discussed the background, objectives, and questions of this study by highlighting the research problem. The chapter has also discussed the limitations of this study and has given a route map to be followed to understand the logic, scientific approach, and coherence of this study by providing an overall organization of the current study. The chapter after this will discuss prior studies in the field in the form of a detailed review of the literature.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Chapter Overview**

The literature review chapter places the current research study within the conceptual and theoretical context by examining the body of existing and emergent literature on social media, contemporary uses of social media, and various social media tools. The chapter also explores prior studies on the use of social media as a tool of communication, relationship management and goals reinforcement. The chapter will close with a brief conclusion.

#### **2.2 Background**

The history of the internet and its uses dates to the time when it was not a public domain. Rather, the internet was used only as a small intranet for defence purposes. However, upon viewing its benefits and plus points, the internet was then made accessible for academic institutions from where, within no time, it spread to the general public across the globe (Shemberger & Wright, 2014). As a result of this, the internet became a public domain and reached homes. It became so widespread that today it travels with people wherever they go. Today, we live in an “Information Age” that allows access to an explosion of information through virtual and digital resources and technologies, making information and knowledge a shared resource and wealth Bennett *et al.* 2013 as cited by (A. Hausmann et al., 2018). The internet became a desire and necessity as it turned the globe into a global village owing to effortless, timely, functional and efficient communication it provides (van Zoonen, Verhoeven, & Vliegthart, 2017).

However, it is noteworthy that before becoming a public domain, the internet was released to academic institutions like universities, for use. Therefore, the use of the internet in the

field of education is older than its use by the public. Back in the 1990s, the internet was used for the first time in an economics classroom (Agarwal & Day, 1998; Al-Bahrani et al., 2015). The rationale was that it would help learning and pedagogical processes by facilitating communication between students and teachers. Another idea behind this could be to make learning resources available for students even outside classroom and to make it available for everyone irrespective of their physical presence in the actual class.

Following this, microblogging was introduced in 2007 as a newer form of learning (Ebner et al., 2010). These blogs were character restricted where the user could only write a short blog of 147 characters, followed by comments and discussions. With the help of such blogs, students could share their information on a certain topic, and teachers could monitor how the discussion is progressing. With the introduction of Web 2.0 technologies, the whole teaching and learning experience was revolutionised (Ebner et al., 2010). Methods like multi-media materials and social software now help the learning process to be conducted in a way that has never been experienced before (LeNoue et al., 2011). Such advancements gave way to possibilities that could not be executed before. Following these advancements, a new sort of learning emerged. Stephen Downes (2005) appropriately termed it as “e-Learning 2.0” following the possibilities of learning provided by Web 2.0 technology (Ebner et al., 2010). This e-Learning included weblogs, podcasts, wikis and other digital learning resources and methods.

The constant evolution and advancement of digital or internet learning and teaching found new ways of learning through yet another source of communication on the internet: social media. Social media, after wikis, blogs and other methods of learning, has now revolutionized the e-Learning experience to the next level (Shemberger & Wright, 2014). Students now use the social media platform on the internet to interact with teachers and peers to enhance their learning experience. Activities like discussions, class participation, access to learning resources, are now done through social media more than before (Shemberger & Wright, 2014). As discussed earlier, social media provides the opportunity for effortless, easier, and efficient communication; it is now used as a pathway to learn. Following this wave of social media that revolutionized the learning and teaching experience, new ways of learning and teaching are now emerging and attracting

individuals seeking to learn through this platform (Shemberger & Wright, 2014; VanDoorn & Eklund, 2013).

There are several ways in which social media is used in the field of education today. Bearing in mind the functions of social media, we can better understand the contributions of the use of social media in education at a deeper level.

### **2.3 Emergence and Evolution of Social Media**

The internet became more of a public domain with the birth of the internet's offspring, social media. Today, social media has enabled people to feel themselves part of activities and events which they could only know about through news and print media. Nowadays, people can exchange information, ideas, emotions and knowledge in the form of text, videos, voice, pictures, emoticons, stickers, and many other interactive ways (Kordmahaleh, Rouhipour, Mirbaha, & Baratloo, 2018). It is today possible owing to the existence of social media that we can update each other in real-time as we undergo a certain event.

Although social media sites and applications vary in features, they may generally be defined as web services that allow creating a public or semi-public profile, manage a list of users whom they are connected within that web and visiting connections in their list as well as others who are within that system (Boyd & Ellison, 2007). This definition could be viewed as a generalizable one since most, if not all, social media sites, networks and applications allow more or less of these features.

Following the above definition, the first social network site to be made available was in 1997 (Boyd & Ellison, 2007). SixDegrees.com was among the first sites to allow the above features to its users. Another site, Classroom.com facilitated students to connect to their peers and school mates and to other people within the same network. However, SixDegrees was the first site to allow users to connect to other people within the network and to send messages to them. Despite its popularity and innovative features back in the 1990s, the site closed later in 2000s reportedly owing to be "simply ahead of time" (Boyd

& Ellison, 2007). It implies that SixDegree offered such features back in that time when there was not sufficient awareness of the use of such advance networking sites. In other words, had it been in the age of the internet owned as a public domain, the site would have flourished a great deal following its innovative features. Another reason recorded for the failure of early social networking sites was that people were not willing or interested in connecting with strangers (LeNoue et al., 2011).

Following SixDegree, a wave of dating and community sites such as AsianAvenue, MiGente and BlackPlanet were launched that allowed users to access their friends without a need of seeking approval from the connection (Boyd & Ellison, 2007; Skog, 2005). A similar site called LiveJournal provided the feature of accessing journals of other people whom you mark as friends in addition to offering the feature of messaging (Boyd & Ellison, 2007). With this emerging wave of social networking sites, many followed with slightly different features including Cyworld, LunarStorm (Boyd & Ellison, 2007; Skog, 2005), Ryze.com (Boyd & Ellison, 2007), Tribe.net, LinkedIn, Friendster, MySpace, Facebook (Cardon & Marshall, 2015) and a number of others. These networking sites began to emerge so rapidly one after the other that presented a neologism with acronym YASNS (Yet Another Social Networking Service). These sites, constantly emerging since the 1990s, underwent a change in their adoption since their emergence (Cardon & Marshall, 2015). Between 2005 and 2009, the use of social networking sites and application hit record surge, attracting millions of users from across the globe (Cardon & Marshall, 2015). In the year 2011 alone, the number of Twitter users was estimated to be around 100 million with Facebook taking over with 600 million users (C. Evans, 2014). The number keeps on increasing with a widespread increase in not only users but the ways in which social media networking sites and applications are used and availed rather than using them merely as a tool of communication and making friends. Different uses of social networking sites and social media shall be discussed in detail in the following section.

Another face of social networking site emerged as the use of intranets for internal communication. Platforms such as Yammer, Chatter, SharePoint and Jive served as collaboration tools (Cardon & Marshall, 2015; J. S. Hausmann, Touloumtzis, White, Colbert, & Gooding, 2017; Neill, 2015). Such intranets were mostly adopted by large-

scale businesses that had a large number of employees and offices who needed to communicate and collaborate to work. These intranets or internal social networks allowed the users to comment, share, rate, review and to access and work with other employees within the organization (Neill, 2015). Since the idea was to develop a network that connects users within the organization with each other, these internal social networks were used in corporate settings and within government organizations. These networks facilitated internal communication without needing physically travelling or accessing other employees within the organization for intra-organizational communication needs. Owing to such perks and benefits, social networks overtook communication from email (electronic mail), which was the most utilized source of digital communication before 2009 (Hinchcliffe & Kim, 2012). Although, many corporate settings still use email widely; however, experts view social media to be a more desirable source in the next couple of decades (Cardon & Marshall, 2015).

Later on, blogs and social networks also took over print media and old ways of communicating information in different fields, such as education and journalism (Pronina, 2018). In the running age, social media has become a newer tool of communication among people for their educational and informational needs (Christian, 2014). Technology further added to the popularity of social networking sites and application. For instance, posts from Facebook or Twitter can be accessed on a laptop as well as a mobile phone with the help of application software (C. Evans, 2014). This might be another reason why early social networking site like SixDegrees.com failed to survive as back in the 1990s, there were no mobile or smartphone technologies available to use these social sites anytime, anywhere. These social sites back in the 1990s relied on users to reach the spot where they had their desktop computers mounted and to access these sites through their computers. It was more like dedicating attention and time to use these social sites, unlike today where people can, and they do access contemporary popular social networking sites and applications without being bound to a special device, specific place at a certain time.

Despite constant emerging social networking sites over time, users have several social networking applications and sites installed on their devices since each application software offers some unique or stand out feature that other applications do not offer. These

applications even vary in the features they all offer. For instance, they may vary in the way how you send messages, share videos, range of stickers and emojis and emoticons, photo sharing facilities, group chats, voice notes, downloading and uploading method, features and size limitations, etc. (Boyd & Ellison, 2007). Moreover, some applications can be run only on a desktop or laptop, some only on smartphone devices and some on both (Boyd & Ellison, 2007). Yet there are social networking sites and application software that allow access to people of specific geographical or linguistic origin, such as Orkut (Kopytoff, 2004) cited by (Boyd & Ellison, 2007). Other specifications and preferences include those of ethnicity, political preference, religious identity, and sexual orientation. According to research, though controlled and managed by human beings, there are social networking sites today that are dedicated to cats (such as Catster) or dogs (such as Dogster) (Boyd & Ellison, 2007).

Since the 1990s, social networking sites and application software have emerged in significant number and have evolved a great deal. They have continued to amaze and facilitate their users with new ideas, innovations that make individuals feel connected to each other more than ever before. However, the use and scope of social media do not limit to fun and connectivity, rather it has several other uses within a number of different fields and professions across the globe, as reviewed in the next section.

## **2.4 Contemporary Uses of Social Media**

Today, social media is a trending medium of communication and is being used for a number of different purposes. These purposes are beyond simple use of social media: making friends. This section unveils some of the most commonly met purposes through the use of social media.

### **2.4.1 Transmission of Message**

Transmission of a message is probably widely assumed social media use. This purpose lies at the core of all the other purposes and uses of social media. As social media is taking communication by storm, other channels that come under ‘big media’ are left behind

(Pronina, 2018). People today even run their own social media channels to transmit the intended message, which was previously a monopoly of big media (Pronina, 2018).

### **2.4.2 Business**

The most redundant reason for the use of social media revealed from the literature reviewed is business. People, big and small-scale industries, as well as amateurish sellers, use social media to sell their products and promote their business. The use of social media for business purposes is so vast that it is now emerging as a debated branch of management literature (Mount & Martinez, 2014). Researchers who deal in business communication consider social media as playing a significant role in online business social networking (Cardon, 2009; Dyrud, 2012; Knight, 2012; Norris, 2007) cited by (Cardon & Marshall, 2015). This leads to a safe prediction that social media might become a field of specialisation or branch of academics in the near future. Rather than viewing it merely as a tool of communication, social media is now being used as a tool of earning capital. It is successfully serving business purposes owing to unique tools it offers that are not available in other methods of business selling, promotion or attracting customers (Filo, Lock, & Karg, 2015). Some pluses of social media that makes it an ideal tool for business purposes include interactivity, collaboration and co-creation above one-to-many communication; integrates communication and distribution channels; provides opportunities for customisation; and delivers superior speed to the delivery of information communication and feedback (Shilbury, Westerbeek, Quick, Funk, & Karg, 2014) cited by (Filo et al., 2015). Following discussion reveals some examples, from many, of different industries that used social media for business-related purposes.

### **2.4.3 Medicine, Health and Wellbeing**

After business-related purposes, the literature reveals the use of social media in health and medicine related field. Physicians today are utilizing the social media platform to share their research and medical work with other physicians and researchers (Kordmahaleh et al., 2018). This may be significant, as physicians, and medical specialists can now share their findings to work collaboratively with other specialists to come up with solutions of

medical calamities. Following this, social media is also integrated with medical studies and education today (Kordmahaleh et al., 2018). Although there exist challenges to adopt social media tool within, medical science and research, it still aids the field.

Three main uses of social media in the field of public health: “epidemiologic monitoring and surveillance, situational awareness during emergency response and communication surveillance” (Fung, Tse, & Fu, 2015). Epidemiologic monitoring and surveillance include accessing and tracking official information, diagnosis, and detection of disease as well as understanding disease incidence. On the other hand, communication surveillance comprises of global awareness of a certain disease or cure as well as viewing people’s reaction to health campaigns that are promoted through social media (Fung et al., 2015).

From the research results of another study, adolescents share information about their health on social media. Although privacy is a concern, they seek to connect to other people with similar health conditions in order to take advice from them about their medical condition (J. S. Hausmann et al., 2017).

#### **2.4.4 Community Building**

Social media is also used today as a tool for building community. By joining people of similar interests, similar activities and similar cultural traits, social media is now helping communities establish relationship with other people from the same circle (Ackerman et al., 2004) cited by (Thomas et al., 2017). Social media accomplishes this by mobilising, connecting and uniting individuals (Thomas et al., 2017).

#### **2.4.5 Creating Intercultural Connections**

Not only do communities’ benefit from social media for strengthening their intra-community relationships, but social media also helps develop and sustain intercultural connections. A study conducted on university students in Turkey revealed that students from different cultural, ethnic, linguistic and geographical backgrounds meet other students and connect with them through their social media accounts (Mas' udah, 2017). This relation continues even when students go back to their countries at the completion

of their course. In this way, social media helps them make intercultural connections. Li (2010) also conducted a similar study on the relationship between Chinese and Americans. She chalked out that factors like cultural differences, prior knowledge on each other's culture, frequent contact, humour, emphasis on similarities and needs enhance intercultural friendships on social media cited by (Mas' udah, 2017).

#### **2.4.6 Internal Communication**

Internal communication is also growing in organizations with the emergence of social media. Factors such as employer branding, uncertainty at workplace owing to the recession, and worker shortage. have made internal communication a significant part of organizations. With the rise in use of social media, organizations now have made small intranets of their own where they communicate internally following the trends and tools of social media networks. This helps them create an internal communication easily, which may not be possible otherwise. Research also reveals that internal communication through social networking helps improve employee engagement and performance (Cilliers, Chinyamurindi, & Viljoen, 2017).

#### **2.4.7 Social Use**

Another popular use of social media is for social and political purposes. Researchers believe that people such as social media activists can help societies organize (Cetinkaya, Sahin, & Kirk, 2014) Owing to the emergence of social media, this task has become easier. Activities such as social media campaigns and movements can help societies reach a certain task or goal (Cetinkaya et al., 2014). Such movements on social media can help work out real-life movements and campaigns. One popular example is the Arab Spring Occupy Wall Street movement that triggered in the year 2011. The movement was run on social media to raise voice against social inequality and foreign influence on the state's matters and decisions (Cetinkaya et al., 2014).

Social media also reflects social differences, such as economy, culture, etc. a study conducted on the citizens of the United Kingdom unveiled their socioeconomic statuses by studying their social media and the internet usage (Yates & Lockley, 2018). Individuals

also compare their economic and social status by comparing it with that of their friends, peers, relatives and strangers (Uhls, Ellison, & Subrahmanyam, 2017).

Another study revealed the use of social media networks by NGOs (non-governmental organizations). Based on NGOs in South Africa, the study informs that despite limitations and relatively slow implementation of social media in their work, NGOs in South Africa are utilising social media for their organizational needs (Nchabeleng, Botha, & Bisschoff, 2018). However, factors including lack of finances, management, reliability of information and technology, quality, and other factors of the sort make it difficult and challenging for the NGOs to use this tool discussed by Southern African NGO Network 2010, (Nchabeleng et al., 2018).

#### **2.4.8 Workplace Related Purposes**

Social media is also utilised within the workplace for various purposes. Social media applications can be used at work as well as home, which helps remove the boundary and limitations of working only at the workplace (Cilliers et al., 2017).

Today, scientists are also using social media as a workplace tool. They use science-related blogs, meet other scientists, share their research and follow pages on social media of their interest (Collins, Shiffman, & Rock, 2016). At the workplace, they use platforms like Twitter to connect with other scientists to discuss the undergoing task and work (Collins et al., 2016).

#### **2.4.9 Other Uses**

Other uses of social media include the promotion of minority or marginalised groups. For instance, a study conducted by Coche (2014) studied how social media was used to promote women's soccer teams.

The transport industry is also benefitting from social media as a tool for disseminating transport-related information (Gal-Tzur et al., 2014). Information including vehicle number, schedules, fares, and any updates can be shared with travellers and can be spread

across the general public. Since social media use is on the rise, it will be more likely that maximum people will view the information.

Storytelling is another use of social media. Applications such as Storify allow access to stories from different sources and writers. Storify allows telling of narratives virtually in digital format and even helps writers form stories from prompts provided on the application (Shemberger & Wright, 2014).

There are a few other big and small scale uses of social media. However, the ones discussed above are among popular or most researched domains where social media is used. Other than these uses, there is one other domain where social media is widely used: education. The next section shall shed light on the use of social media for learning, teaching and academic purposes.

## **2.5 Social Media as a Learning Tool**

Like many other domains, the field of learning and education is also not behind in using social media. There are a number of studies conducted in the use of social media as a learning tool by teachers and students.

### **2.5.1 Emergence of e-Learning from Web 2.0**

Commonly referred to as e-Learning, the contemporary use of social media as an e-learning tool is made popular due to the dawn of Web 2.0 technology. Learning that happens through the use of Web 2.0 technology is also termed as e-Learning 2.0 (Arshad, Ahmad, & Siddiqui, 2018). It primarily intends to give way to learning that is done in cooperation with others. Not only between students but cooperation between instructors and students. As a consequence, the boundary between traditional methods of learning and e-learning are now blurring to a great extent (LeNoue et al., 2011).

Since e-Learning 2.0, following the methods made available by Web 2.0, allows connectivity, association with others who exist within the learning process, content syndication, re-use of learning materials, and personalization; it is increasingly becoming

a desirable technology for learning in the shape of social media applications (Arshad et al., 2018). E-Learning 2.0 has given way to blended learning by combining face-to-face and online modes of information and knowledge delivery within the learning process (LeNoue et al., 2011).

### **2.5.2 Different Ways of Integrating Social Media in the Learning Process**

Within the learning domain, social media is used for different purposes in a number of different ways. One of the most popular forms of using networks within universities is the Learning Management System (LMS). LMS is like a social network that educational institutions across the world use for keeping students up-to-date about their course, learning material, connectivity with teachers, administration and peers, exams, lesson plans, syllabus, and assignments (LeNoue et al., 2011). Since each institution has its own LMS network or application, they are more like small intranets. However, they work on features of social media applications.

Students popularly use social media for their education and learning needs. A study conducted on about 576 university students in Saudi Arabia reveals that more than 85% students reported the use of social media for their educational needs (Alsuraihi, Almaqati, Abughanim, & Jastaniah, 2016; Ansari & Khan, 2020). The study also found that social media use for learning is equally popular with both male and female students. YouTube, for video format of the information, is more popular as students find it helpful to learn through visual and animated format. However, Facebook was also widely used by students.

Owing to the growing trend of social media use in different domains, teachers, lecturers, educators and instructors are also using social media to convey information, knowledge and for effective learning of their learners (Davis et al., 2015; Gammon and McGranahan, 2015; Manca and Ranieri, 2016; Veletsianos et al., 2013 discussed by (Gruzd et al., 2018). Applications such as #sschat are utilised to work free from temporal and spatial limitations (Krutka & Carpenter, 2016). A study conducted by Lupton (2014) found that a considerable number of scholars and teachers have reported that they use social media for

academic purposes like self-promotion, teaching, research, and helping students (Gruzd et al., 2018). Teachers and researchers have also reported that social media helps them find other individuals, groups and pages of similar interest as theirs, which helps them gather specific information, seek support and advice in research (Hawley & Valli, 2007; Sprinthall, Reiman, & Thies-Sprinthall, 1996) cited by (Krutka & Carpenter, 2016).

Not only as a source of information and knowledge is social media used in the domain of learning, rather, researchers like Saleem, Aly and Genoni found social media an altruistic tool in filling information gap. A study based in Iraq, Australian and Iraqi researchers found that social media serves as a medium of information exchange between researchers and libraries of both countries in order to fill the information gap that either country may have (Saleem, Aly, & Genoni, 2015).

Furthermore, research has also suggested use of social media in educational institutions for purposes such as attendance record, a tool of disseminating information and knowledge, and for scheduling institutional events and activities, and informing students about them (Abdillah, 2017; Van Den Beemt, Thurlings, & Willems, 2020). Smartphones can be used to keep track of student's activities on these social platforms and blogs.

### **2.5.3 Benefits of Integrating Social Media in Learning**

There are a number of advantages, features, and benefits that social media offers that make it a desirable and ever-growing tool of learning. Within education, the benefit of collaborative learning on social media makes it a popular tool of learning. The fact that students can communicate and collaborate synchronically and a-synchronically with their peers and teacher is among one of the top benefits of integrating social media in education and learning process (Kot et al., 2017). Collaborative learning is also viewed as a consequence of computer support and social media network features of connectivism (Gruzd et al., 2018). That elaborates how learners communicate with each other in learning space.

Social media also allows learners through experience and real-life examples. John Dewey terms it as learning through lived experiences; that is learning by making connectivity

between learning activities and real-life situations, and experiences and practice (Bruce, 2009; Gruzd et al., 2018). Another research conducted by (Casey, 2013) also stresses that social media provides an opportunity to connect students' learning with the real world in order to make real-life demonstration of what they are learning and make learning more practical for them.

Moreover, as social media allows access to a wide range of contacts, resources, and contexts, it makes the learning process handier and more accessible. Termed as “networked learning” (Gruzd et al., 2018), information and communication technologies allow access to a number of other contacts and users of similar interests and needs from whom students and teachers can benefit. Learners and teachers can not only connect with other learners and teachers of their community, rather they can access learners and teachers from across the globe using social media (Gruzd et al., 2018; Haythornthwaite et al., 2007). This means the more contacts one has; more are the learning resources and support available. A research study conducted specifically on medical education revealed that since social media allows access to more contacts and people, it provides more options of learning and vaster resources of information (A. Hausmann et al., 2018; Nadeak, 2020). Additionally, social media has also been reported to help enhance professional development and better opportunities by the same research study.

Furthermore, social media use for learning has been reported to enhance student's inspiration and comprehension towards their study (Arshad et al., 2018). As learners connect with other learners on social media, they can view their work, ideas, knowledge and can get inspiration and motivation from them.

Another benefit of using social media for learning purposes is that it can be used both in formal as well as informal settings of learning. Greenhow and Lewin (2016) found as a result of theory study that social media, in the European region, is integrated for learning within a formal classroom setting. Whereas in the USA, there are communities independent of formal education who use social networks for learning purposes within an informal learning setting (Greenhow & Lewin, 2016). This benefit of social media also helps make learning resources available to learners even when away from a formal setting.

It can help in making learning resources available to learners who cannot make it to class or formal lectures (Arshad et al., 2018).

#### **2.5.4 Twitter and Facebook: Most Popular Social Media Networks for Learning**

There are a number of social media networks existing and emerging that are being utilized for learning purposes. However, the literature reveals that Twitter and Facebook are reportedly among the most popular social media networks used for learning related activities and purposes.

##### **2.5.4.1 Twitter**

Twitter is a popular social media application and network, popularly used by people across the globe. The domain of education and learning are no exception. Today, twitter is increasingly becoming popular for learning purposes. Features like microblogging and tweeting serve learning and teaching purposes for students, teachers and researchers (Ebner et al., 2010; Shemberger & Wright, 2014).

Twitter is also viewed as a tool that can transform learning experience all together. It is considered as a tool that can help make students more active participants of the learning process (Htay, McMonnies, Kalua, Ferley, & Hassanein, 2020; Tur & Marn, 2015). By having their personal accounts and blogs, learners can have a sense of identity and can participate more in the learning process as active agents than merely being passive receivers of information.

(Yakin & Tinmaz, 2013) who conducted a study on university students' use of Twitter for learning found evidence of Twitter being used for learning purposes. The study found that Twitter can actually be helpful in making higher education more efficient (Kunka, 2020; Shemberger & Wright, 2014). Another study conducted by Evans on Twitter usage for learning came up with three implications: (1) Twitter was used as a tool of organizing social life as well as sharing information; (2) Tweets related to learning did not trespass

into the domain of creating interpersonal relations between learners and teachers; (3) Twitter usage had no effect on class attendance of students (C. Evans, 2014).

#### **2.5.4.2 Facebook**

Like Twitter, Facebook is also recorded as a popular social media application that is used for learning and educational purposes. Students can use Facebook pages and accounts for their learning needs, and their activities can be monitored through smartphones by their teachers (Abdillah, 2017).

A study undertaken by Rasiah (2014) found that Facebook provides a positive and less-threatening platform for learning through social networks. It allows group discussion and a way of creating a better connection with the teachers and learners. It also allows teamwork and cultivates “communication skills, teamwork skills, interpersonal and intrapersonal skills, leadership skills, time management, discipline-specific knowledge and digital literacy skills” (Rasiah, 2014).

Harris (2012) also suggests that Facebook is an effective means of achieving learning goals in Higher Education (Beltran-Cruz & Cruz, 2013). A number of other studies view Facebook as a useful social media application for learning and teaching (Piotrowski, 2015).

#### **2.5.5 Conclusion**

In the light of literature found regarding the use of social media as a learning tool, it may be firmly concluded that social media is and can be further used as a tool of learning. Students view social media as a tool that helps them in their educational needs as it motivates them in their learning process; they have positive comments about social media as a tool of learning (Al-Shdayfat, 2018; Neier & Zayer, 2015).

A review of at least 29 dissertations conducted on social media use as a learning tool revealed that only two dissertations recorded negative attitude towards social media. All the rest, 27 dissertations presented evidence of a positive attitude towards the use of social

media for learning-related needs (Piotrowski, 2015). However, teachers were more cautious than learners about their use (Piotrowski, 2015). Chawinga (2017) also recorded that students enthusiastically use social media for educational activities (VanDoorn & Eklund, 2013). Another research, based on students in India, found that social media use in education is associated with higher grades and academic achievements (Al-Shdayfat, 2018).

Despite all the benefits and popular use of social media as a learning tool, there are still challenges that impede learning done effectively through social media tool (Gruzd et al., 2018).

## **2.6 Social Media as a Tool of Communication**

The power of social media is its features of access to wider content as well as communication with others (Osterrieder, 2013). Communication is the key use of social media that also underlines all the other uses (Hammou, Aboudou, & Makloul, 2020). Before the emergence of social media, the internet was used for communication purposes. However, social media enhanced the communication process by enabling multidirectional communication within no time and with ease (Roque & Raposo, 2016). It has helped transcend geographical and temporal barriers through its unique communication features (Roque & Raposo, 2016; Teixeira et al., 2012)

With the introduction of social media as a tool of communication, families, and friends' communications have greatly altered (Joo & Teng, 2017). Research reveals that social media application like Facebook has been reported to have improved communication among relationships, friends and family members and that they know each other more now (Joo & Teng, 2017). Families and friends can connect on social media and be updated about each other by communicating through social media even if they are miles apart.

Businesses and markets also extensively utilize social media as a communication tool. They use social media to communicate with their customers (Garcia Henche, 2018). One reason for using social media as a popular marketing communication tool is that it does

not require an investment of big capital to use it as a communication tool (Eagleman, 2013). Marketing agents can simply create their business pages and promote their products through that page. Project managers also use social media in order to communicate with their team members since good communication is a significant part of good teamwork (Whited, 2016). Owing to this extensive use of social media by marketing and business industries, businesses now see no choice but to use social media as an effective tool of communication for their business (Kudeshia & Mittal, 2015). Even at workplaces, the communication process is moving from e-mail to a hybrid of text messaging, social media and email (Chesick, 2015; Kiddie, 2014).

In the field of education, teachers view social media communications as a tool of teaching. Results from research have shown that teachers have shown a positive attitude towards the use of social media as a communication tool used for teaching purposes (Tozer, 2017). Social media application such as Facebook have been reported to be helpful for students as well for communicating with their peers and teachers (Al-Shdayfat, 2018).

In terms of its use as a communication tool, research has found that social media helps improve communication between public and government. It was primarily because people were able to understand, all what was discussed and said about one topic or issue in a continuity. Secondly, access to previous information is always possible as previous data is not removed (Ross, 2014). Also, since social media reduces communication costs for people, it is a popular tool for communication with others (Ross, 2014).

The health sector is not behind in the use of social media as a tool of communication. There are evidences of the use of social media for communication related to health (Jha, Lin, & Savoia, 2016). For instance, a study shows that with an outbreak of mumps, social media was used to create awareness among people about precautions and possible care and cure. The consequence was, in-time spread of information and awareness and dissemination of information to the greater public (Tanaskovic, 2014).

Relevant literature revealed that among other social media networks and applications, Twitter is a very famously used application for communication and learning (Cohen &

Duchan, 2012). It is used for “microblogging, or brief, direct, one-to-many communications” at no or minimal cost (Harris et al., 2014). Students also use Twitter to communicate with their peers and teachers (Shemberger & Wright, 2014). Students having class accounts on Twitter find it easy to focus on their learning needs as it separates their communication with friends and family and teachers (Malik, Heyman-Schrum, & Johri, 2019; Shemberger & Wright, 2014). It has been suggested that if social media proves to be a reliable tool of communication, it should be integrated into the communication plans of the state (Chesick, 2015).

## **2.7 Social Media as a Tool of Relationship Management in Teamwork**

There is plenty of evidence in the form of research studies that report the use of social media as a tool of connectivity and communication or making connections. However, there is scarce research or only very few research studies that talk about social media as a tool that can help in managing the established relationships or relationships between teams.

A few research studies have considered social media as a tool that helps the team unify by working on their relationship as part of a team (Ahmad, Zulfikar, & Hardiana, 2020; Henttonen et al., 2014). It is reported that when people work in teams, they tend to perform better than working on a task individually (Saffer, Sommerfeldt, & Taylor, 2013; Widiantoro, Ernawati, Lainsamputy, & Sumarmi Sumarmi, 2021). Working together as a team also provides cooperation from team members which results in effective teamwork. However, to have effective teamwork and output, effective and efficient teams are needed. Furthermore, efficient teams can only be formed if team members have a steady and healthy relationship with each other (Waizenegger, McKenna, Cai, & Bendz, 2020). Social media can provide that opportunity to create effective relations between team members (Henttonen et al., 2014). Also, research shows that teamwork is more fruitful owing to the sharing of information among team members (Henttonen et al., 2014; Molm, 1994), which can be easily done using social media.

Neil (2015) believes that team members tend to have a better relationship with other members of the team if they adopt a certain behaviour, as well adapt their behaviour in order to maintain and sustain team relationship (Neill, 2015). However, the literature does not appear to present evidence of social media use as a tool for practising such adoption or adaption strategies for relationship management.

Chinese businesses have been reported as successful users of social media in terms of building relations with their customers to sell their products and business (Niedermeier, Wang, & Zhang, 2016). However, it appears that the evidence discusses building relations but not how to manage or build relations such as required in a team to perform a certain task. Also, there is not much evidence of relationship development using social media that talks about relationship management within the domain of education and learning. There are evidences for the use of social media as a tool for team-based learning through student-centred learning and sharing of learning resources (Rasiah, 2014). However, the literature, thus far consulted, provided little evidence of the use of social media as a tool of relationship management for building effective teams within teamwork.

## **2.8 Social Media as a Tool of Goals Reinforcement**

It appears from the literature reviewed that there is less evidence of the use of social media as a tool of goal reinforcement. However, there is general evidence that considers goal reinforcement as a significant factor in better team performance. Colas, Fournier, Sigaud and Oudeyer (2018) found goal reinforcement to help team members overcome the issue of forgetting the undertaken task or goal or the issue of not being able to focus on a certain aspect while working on another aspect of the task (Colas, Sigaud, & Oudeyer, 2018). Another study conducted by Huber et al. (2008) and Veeriah, Oh, and Singh (2018) also consider goal reinforcement as an altruistic factor for higher goal achievement. However, there could not be found any evidence of using social media of goal reinforcement by teams for effective teamwork and goal achievement. Researchers also found social media as a tool of goal achievement (Cramer, 2009; Torgan & Cousineau, 2012). However, there could not be found literature that reports the use of social media as a tool of reinforcement in helping achieve these goals.

## **2.9 Conclusion of Chapter**

The discussion in this chapter can be concluded as indicative of social media as a widespread and integral tool of communication as evident from a number of research works discussed above. The chapter reveals that social media is not only popularly used within a number of various disciplines and organizations, but also used as a tool for managing teams. The following chapter is focused on studying the theoretical framework of this study.

## **CHAPTER 3**

### **THEORETICAL FRAMEWORK**

#### **3.1 Chapter Overview**

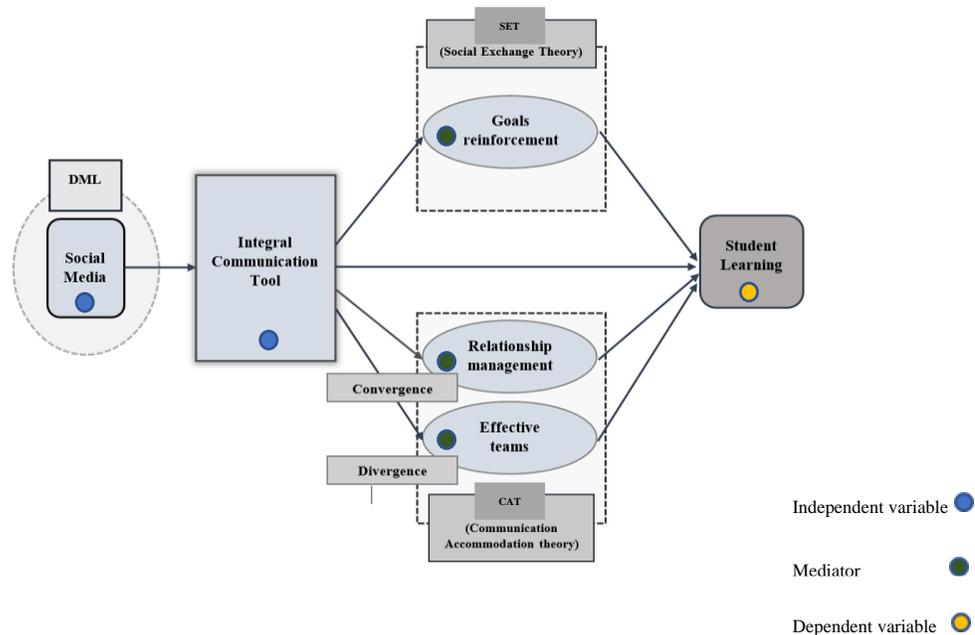
This chapter focuses on developing a framework that can be used to support the objectives of the research, as well as to investigate the questions raised by this research. To achieve this, the chapter evaluates two grounded theories, Communication Accommodation Theory (CAT), and Social Exchange Theory (SET), and a medium of learning such as Digitally Mediated Learning (DML). The chapter discusses how these theories and DML are able to underpin the current research study, followed by a conclusion of this chapter.

#### **3.2 Theoretical Framework**

As part of the current research project, a conceptual framework is constructed to help gain clarity and apply key theories outlined in chapter 2. A conceptual model is presented after setting the objectives of the study. The conceptual model is generally presented in graphical form, as a model is explanation of theory. The terms “conceptual framework” and “theoretical framework” can be used interchangeably (Fain, 2017). A conceptual framework is of great significance only if the theory underpinning is used correctly to support the aim of the study, also suggests use of a framework in a study (Parahoo, 2014). However, he also elaborates that if the conceptual framework of research study is based on concepts, it has to be called “conceptual framework”, and if it is based on theories, the researchers should define it as “theoretical framework” (Fain, 2017). On the other hand, researcher advocates that there is not much definition available in research work for conceptual framework (Green, 2017). He also defines that it is a diagrammatic representation of concepts or theories for research studies.

The significance of developing and applying a conceptual framework for the research study is that it illustrates the flow of research and its aims and shows how the researcher constructs the conceptual framework. There is literature available for uses of social media, its pros and cons, evolution, new technologies and other aspects. The aspect which this research investigates is social media's impact as an integral communication tool for building effective teams, and there is scarce literature available. On this basis, a conceptual framework is constructed by author studying concepts behind theories and is not adopted from any previously available model or framework.

Considering the objectives of the research, and literature review in chapter 2, a theoretical framework is presented in figure 1 below. The illustration describes the flow of the research study. This was designed according to the objectives set for the current study. The theoretical framework also demonstrates the dependent and independent variables and their relationship (B. C. Evans, Coon, & Ume, 2011). Independent and dependent variables are presented in Figure 1 below, and later under the heading of “Measuring variables”.



**Figure 1: Theoretical Framework**

### 3.2.1 Justification of Theoretical Framework

Considering the literature, it is evident that if effectiveness in a team is required, communication can be very significant if used to achieve desired objective (X. Zhang, Chen, de Pablos, Lytras, & Sun, 2016). In the above illustration, Figure 3.1, social media is presented, and the relation shown between variables “social media” and “integral communication tool”, that will be analyzed to see the degree of effectiveness among teams. Among the team members, relationships can be managed by understanding each other and by accommodating diversity (Henttonen et al., 2014). This research aims at studying social media as a tool that helps achieve accommodation and inclusion of diverse backgrounds as well as helps in relationship management, which in return creates better teams that could perform effectively. One of the theories that interlink relationship management and accommodation of variety through communication is the Communication Accommodation Theory (CAT) proposed by Howard Giles (Soliz & Giles, 2014). The two significant offshoots of CAT famously termed as (I) Convergence & (II) Divergence, are adopted for constructing a theoretical framework for the current research.

Convergence can help solve the problems arising due to diversity. According to Soliz and Giles (2014), convergence makes a member of a team more favorable since it seeks similarities between the team members. The researchers were comparing results in the team members’ identifying differences from their counterparts, and later results seeking similarities between the team members to become more familiar with each other (Soliz & Giles, 2014). In the construction of theoretical framework, this postulate is adopted that will help in creating united teams that have more confidence, leading to effective teamwork. In this way, the team members are accommodating their fellow members by accepting their behavior, speech, and dealings of other forms. A similar concept is presented by Albert Bandura while discussing “*Cognitive Mediation of Reinforcement Effects*” (Bandura, 1978). He states that individuals tend to use “*verbalizations*” that are acceptable and rewarding, and endeavor to abstain from the ones that are punishing or do not lead to success (Bandura & Walters, 1977, p. 4).

However, where convergence helps the team members come together; divergence helps them maintain their identity and uniqueness (Gallois & Ogay, 2005). In the above illustration, the second postulate is adopted for creating a theoretical framework; it shows the relationship between “integral communication tool” and “effective teams”. This will help to understand the avoiding shadowing of any team member who may require special attention, help or any other support. Divergence may also help bring in a variety of thoughts and ideas within the team, which is then brought into harmony by practicing convergence.

Communication Accommodation Theory (CAT) could, therefore be applicable for creating better relationships within the team and also for accommodating variety (Gallois & Ogay, 2005). Further, a team that has a vivid idea of as to what goals it has to achieve could perform better (Emerson, 1976). One way to moving towards the goal is the reinforcement of reward. Therefore, if the goals are reinforced for the team members, the reward shall be reinforced too and is then most likely to help ensure effective teamwork. This idea is covered by the *Social Exchange Theory*, presented by George C. Homans, that views relationship management among the team members through communication (Emerson, 1976). It states that mutual reinforcement, while viewed in a microeconomic framework, moves towards the successful completion of the goal/task assigned to a team (Z. Zhang & Jia, 2010). Therefore, reinforcement of reward can help reinforce the goal that is to be achieved by the team; thereby, leading to effective teamwork. According to the Social Exchange Theory, individuals try to engage themselves in the activities or behaviors that shall be admired and praised by organization results in high performance (Z. Zhang & Jia, 2010). Therefore, accommodating other team members by practicing what CAT suggests is a behavior that may reward the teams in terms of effective teamwork and task completion.

Digitally Mediated Learning (DML) has earned so great a significance that universities around the world are offering courses related to it, such as a Master course offered by University of Barcelona under the title Digitally Mediated Learning Environments (Barcelona., 2018). It came to prominence because of an increased need for distant

learning for adults owing to limitations to access the institutions physically (LeNoue et al., 2011). The very characteristic of DML can prove helpful for people working in groups since each member of the group may have different availability and resources to be physically present for a group meeting.

" The internet is, inexorably, becoming the dominant infrastructure for knowledge . . . as a global platform for knowledge exchange between people" (Tapscott & Williams, 2010). This exchange of knowledge or ideas can also be carried out by student teams using various digital tools, such as Social Network Sites (SNS) (LeNoue et al., 2011). The benefits of using Social Networking Sites (SNS), as listed by (Boyd & Ellison, 2007) include the creation of a unique spot for a designated team or group of people, and allowance of listing other users with whom the information is being shared (Boyd & Ellison, 2007). In this way, Social Networking Sites (SNS) or social media can also help students achieve academic goals since it allows sharing of information, creation of one stop for all members as well as a distant learning opportunity. However, X. Zhang et al. (2016) are of the view that use of social media by the students also brings up various challenges, where the virtual nature of its nature is a problem since it creates distant collaboration.

### **3.3 Research Variables and Measurement Items**

The theoretical framework helps in understanding the aim, objectives and proposed outcome of the research project (Rocco & Plakhotnik, 2009). The presentation of variables used in forming a theoretical framework shows the relationship between each other (Shorey, Cornelius, & Bell, 2008). According to B. C. Evans et al. (2011), theoretical framework shows the degree of relationship of dependent and independent variables. Independent variables are defined as the outcome or end result that are depending on independent variables (Peterson, Homer, & Wonderlich, 1982). Whereas dependent variables affect or impact the dependent variables as they are the cause and influence factors on the results of the research. For the current research, the dependent variable and independent variables are declared through research objectives. The "Social

media”, variable is adopted for current research by using examining concepts of social media by (LeNoue et al., 2011). Mediator variables have adopted from postulates of two theories (CAT & SET), respectively, used in constructing theoretical framework.

In the theoretical framework of the current research, all the variables are illustrated showing corresponding relationships. The Independent variable in the theoretical framework is “integral communication tool”. This independent variable is analyzed based on five measurement items. Thus, the variable has an impact on other variables to affect the outcome. The influence is on the mediators, which includes relationship management, effective teams, and goals reinforcement. In the theoretical framework, social media is an “independent” variable with four items that will indirectly leave an impact on the results of the present research. Mediators are variables that are influenced or affected by independent variables and leave an impact on the dependent variable. This in turn has an impact on the output or results of the research. As mentioned in the above discussion, relationship management, effective teams and goals reinforcement are mediators influenced by integral communication tools and influence student learning which is the dependent variable. The measurement items for these variables are four for effective teams, four for relationship management, and three for goal reinforcement. Student learning in the framework is the dependent variable that is influenced by other variables and is considered as the result of research. Student learning has five measurement items and has an impact from the mediators to form the outcome.

### **3.4 Hypotheses development**

A hypothesis can be developed based on the research problem and review of relevant literature. The hypothesis is a tentative solution to a research statement or problem. In other words, hypotheses are predicted for the outcome of the research, that can be tested after data analysis to be accepted or rejected. For the current research, eight hypotheses are derived from the theoretical framework that will answer the research objectives after getting results from data analysis. Hypotheses made in this study are listed below in next section also presented figure 2 at the end.

### **3.4.1 Social Media as an Integral Communication Tool**

One of the most powerful benefits of social media is the communication facility that it provides (Osterrieder, 2013). A number of factors make social media an integral communication tool. For Roque and Raposo (2016), the factors of time and ease make social media a desirable and integral tool of communication. Messages can be sent across within no time and with an ease of just a click or screen tap.

Another factor identified by Ross (2014) is that communication through social media allows retaining of old communication records that can then be retrieved for future reference. Unlike old paper communication, social media communication has no or has minimal risk of loss of data.

Ross (2014) and Harris et al. (2014) agree on social media as an integral communication tool in terms of cost effectiveness for the dissemination of the message. Ross (2014) and Harris et al. (2014) along with Tanaskovic (2014), also agree on the fact that social media allows the sharing of a message to multiple audiences at the same time. This points to social media being an integral communication tool.

**H1:** Social media is an effective integral communication tool.

### **3.4.2 Social Media and Goal Reinforcement**

Goal reinforcement is a helpful approach when it comes to achieving a goal or task in a teamwork environment. It helps members of the team in remembering the task at hand, as well as helps improve task focus when members might have to juggle a number of tasks (Colas et al., 2018). Since social media allows many different features that allow for goal reinforcement, such as notifications, group messaging and calls, alerts, scheduling, etc., it contributes towards goal achievement (Torgan & Cousineau, 2012). Research reveals an agreement on upholding goal reinforcement as a significant factor in successful goal achievement and social media as a tool that helps achieve this goal (Huber et al., 2008; Cramer, 2009; Veeriah et al., 2018).

**H2:** Social media as an integral communication tool has a positive impact on goal reinforcement.

### **3.4.3 Social Media and Relationship Management**

Owing to its unique features, social media is also considered as an integral communication tool that helps manage the relationship between team members (Henttonen et al., 2014). Social media achieves better relationship management by assuring dissemination of information in time and to all members of the team at the same time (Molm, 1994; Henttonen et al., 2014). This creates a sense of equality and priority among all group members, making every member feel equally informed. This results in a healthy relationship between team members.

Furthermore, Neil (2015) is of the view that relationship management in a team requires the adoption of certain behaviours, and an adaptation to a certain behaviour. Social media, by allowing viewing of individual member behaviour, and overall requirement of the goal by each member at the same time allows a room to make sense of what behaviour better suits all the members, thereby establishing a good relationship with the team (DiCamillo, 2015).

**H3:** Social media as an integral communication tool has a positive influence on relationship management.

### **3.4.4 Social Media and Effective Teams**

A number of benefits of working with social media in a teamwork environment result in effective teams. One of the most significant factors is relationship management achieved through social media that results in effective teams (Molm, 1994). Furthermore, social media allows team members to unify on one platform in real time (Henttonen et al., 2014) that helps each member of the team to be on equal level of progress and information, thus creating effective teams. Also, in teamwork, social media features allow team engagement, feedback, improvement suggestions, and ideas that can all be viewed and

reviewed by each member of the team (Silbury et al., 2014 cited by Filo et al., 2015; Cilliers et al., 2017). These factors allow each member of the team to be able to access every discussion, suggestion, queries, and information equally, creating team satisfaction on the whole. A team whose members are satisfied with their role and significance to combine to create an effective team.

**H4:** Social media as an integral communication tool has a positive influence on effective teams.

### **3.4.5 Goal Reinforcement and Student Learning**

Goal reinforcement, as discussed earlier, has been reported giving positive results in achieving a goal. One goal can also be learning of students. In student learning, the perks of goal reinforcement, such as the ability to focus on the given learning task as the task is repeatedly stressed, ability to remember the learning goal or objectives and being able to concentrate and remember learning a specific aspect while dealing with other aspects helps towards learning achievement (Huber et al., 2008; Cramer, 2009; Torgan & Cousineau, 2012; Colas et al. 2018). Achieving a task or goal as a student is a learning achievement, that in return is student learning, and one way of assuring it is through reinforcement of the learning goal.

**H5:** Goal reinforcement has a positive impact on student learning.

### **3.4.6 Relationship Management and Student Learning**

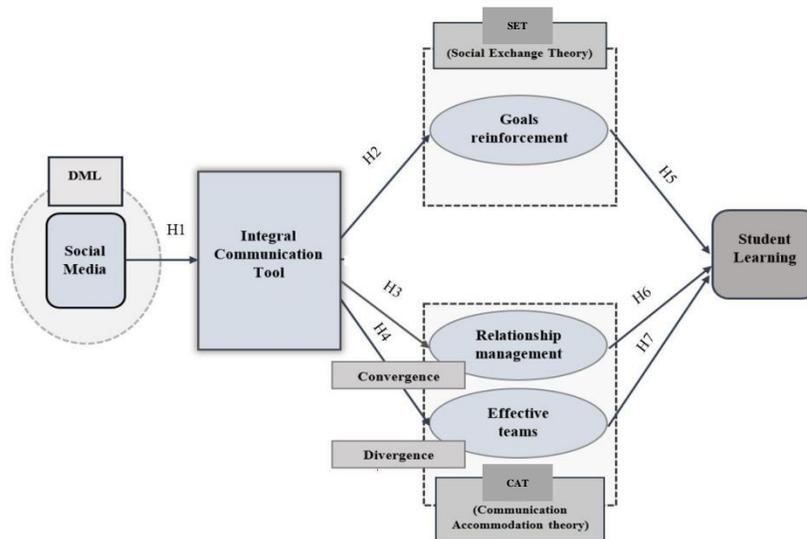
Like goal reinforcement, another factor in achieving student learning in teamwork is through relationship management. Since relationship management is a significant aspect of effective teams, it is proportional to student learning. Connectivism between teams is crucial and has been reported to have a positive effect on collaborative student learning (Kot et al., 2017). Not only relationship management is significant among students; it is also of great significance to ensure relationship management between students and their teachers to achieve better student learning (Evans, 2014).

**H6:** Relationship management has a positive impact on student learning.

### 3.4.7 Effective Teams and Student Learning

Greater team satisfaction means better learning outcomes and student learning. When teams have a sense of how to behave within a team, and how to adapt and adjust to the team environment, effective teams are created (Neil, 2015), and learning becomes more achievable and productive. Effective teams also have greater confidence in what they are doing as they have a better focus on their goal and work towards reminding and sharing with each other to achieve their learning goals (Colas, et al., 2018). In this way, effective teams leave a positive influence on student learning and give positive learning outcomes (Kot et al., 2017).

**H7:** Effective teams have a positive impact on student learning.



**Figure 2: Conceptual Framework of the Study**

**Table 3. 1: Hypotheses Summery**

H1	Social media is an effective integral communication tool.
H2	Social media as an integral communication tool has a positive impact on goals reinforcement.
H3	Social media as an integral communication tool has a positive influence on relationship management.
H4	Social media as an integral communication tool has a positive influence on effective teams.
H5	Goals reinforcement has a positive impact on student learning.
H6	Relationship management has a positive impact on student learning.
H7	Effective teams have a positive impact on student learning.

### **3.5 Conclusion of Chapter**

This chapter discussed the Social Exchange Theory (SET) and Communication Accommodation Theory (CAT), along with Digitally Mediated Learning (DML). The chapter studied the postulates and tenants of these theories and presented a model that shows how the three theories can be integrated as a framework for the current study. From these theories, seven research hypotheses have been derived. The next chapter will look at the research methodology for the current study.

## **CHAPTER 4**

### **RESEARCH METHODOLOGY**

#### **4.1 Chapter Overview**

This chapter provides an explanation of the research methodology for the present study. This chapter demonstrates the research approach that covers the research framework/paradigm, research design, and research methods applied in the study. It starts with the research paradigm and further discusses the research design and sampling for this study. Data collection is discussed as the chapter progresses, followed by the research instrument, data collection, and data analysis. In the last part of this chapter, some administrative aspects are discussed such as ethical consideration and data storage.

#### **4.2 Research Paradigm**

The research paradigm is significant for every research project as it is a worldview of how things work. A paradigm is described as a set of assumptions that demonstrates the shared understanding of reality (Wilson, 2008). Denscombe (2008) is of the view that qualitative and quantitative research requires a paradigm to provide an understanding of the research study and the researcher's beliefs. Szyjka (2012) affirms that understanding the paradigm gives us knowledge about past practices and experiences about particular research. Social science research is about observations and beliefs that portray what is happening in a society. Gray (2013) supports the notion that social science research requires an appropriate paradigm. Narrowing down, in the last two decades, social education research has used qualitative and quantitative paradigms according to the approach from researcher and research objectives (Szyjka, 2012). Yvonne Feilzer (2010) supports Kuhn (1962) that

paradigm can be defined as the “accepted model or pattern” which illustrate in-depth knowledge and organizing structure of a study.

For this research study, a positivist paradigm is adopted. A positivist approach is used in quantitative research methods as there is an investigation of the relationship between variables (Donaldson, 1997). The positivist approach of positivism in research is defined as the criteria or rules that show the relationship of research variables. The notion of positivist is the truth which is defined but has to be discovered or explored using quantitative methods for research (Yvonne Feilzer, 2010). This study adopted a positivist paradigm because of its quantitative nature, where the researcher is studying the impact of one variable on another. The causal relationship is studied in this research, so data analysis is done for examining the relationship between variables. This study intends to establish the impact of social media as an integral communication tool in building effective teams, relationship management and goal reinforcement for student learning. Quantitative in nature, it can be generalized with assumptions that statistical rules used to examine the cause and effect relationship between independent and dependent variables (Szyjka, 2012). Generalization can be seen when there are dependencies in selected similar research population that is being investigated (Szyjka, 2012). Student learning is an important aspect and findings revolve around only this dependent variable. As this study has dependent and independent variables, so a positivism approach is taken to be the best practice for this quantitative study.

### **4.3 Research Design**

The research design is defined as the strategy, plan, or procedure to investigate and answer the research questions. The research design is different from research methods as in design the structure and methods are the ways to collect data to be processed (De Vaus & de Vaus, 2001). Social science requires a design before proceeding to collect data or do analysis (De Vaus & de Vaus, 2001). Wright, O'Brien, Nimmon, Law, and Mylopoulos (2016) are of the view that if the research methods and the research approach are aligned, the quality of research design can be determined. This study is quantitative as the

researcher adopted a cross-sectional research design type. Mann (2003) suggested that this research design is a representation of a sample of the population that may have a different type. This can assist in clarity for population sample, and conducting research becomes more convenient. Considering this research, quantitative research deals with the numbers or statistical procedure to perform data analysis and to obtain results (Vogt, 2006). Quantitative research is used for examining human behaviors and is used in social sciences (Vogt, 2006). According to Campbell (1955) and Nardi (2018), social surveys and related experiments represent quantitative research which is evaluated on statistical tools. In contrast, case studies represent the qualitative type of research evaluated on interpretation approaches. This study is using a questionnaire as a research instrument and uses statistical methods to evaluate the results, and to answer the research questions.

#### **4.4 Research Population**

Research population for this research study refers to the participants who are undergraduate students in selected universities. The research sample is from international universities in Malaysia and is focused on Australian universities in Malaysia. Initially, the researcher focused on five international universities and proposed a target population, irrespective of limitation as “only Australian universities”. The ethical approval was obtained, and the researcher formally started contacting all five universities. However, due to administrative restrictions and different system in institutes, the researcher redefined the target population and limited it to three universities. The reason for selecting Australian institutes is that they have identical administration systems and formalities for data collection at their campuses.

**4.4.1 The Participant Selection:** The target population chosen for this research study was justified according to the research problem. The research aims to examine the impact of social media for building effective teams, and these teams are based in classrooms. For the first phase of this study, while identifying the research problem, researcher arranged general meetings and informal interview sessions with students from different levels of study, i.e., undergraduate, and postgraduate. Students were asked about their classroom

activities and their use of social media, and also if they had group tasks during their semester. The findings from all the informal interviews and sessions here were matched to the research problem and research questions. The summaries showed that the approach was relevant to the study.

**4.4.2 Final Selection of Study Cohort:** Once problem identification was made; the researcher targeted the population of study. In this regard, postgraduate students had fewer group tasks other than presentations. Whereas undergraduate students were observed to have more group tasks and teamwork during semesters. Postgraduate study programs have fewer classes in a study week, so that the study structure is different from undergraduate, i.e., individual assessments and presentations. Choosing the right research population is key for conducting a research study for effective and better results and to answer the research questions (Muijs, 2010). The undergraduate students were selected as sample for this research as they have group assignments during the semesters. Researchers who conducted studies on social media application in education had targeted students as population (C. Evans (2014).

The undergraduate students from three Australian universities are selected for this research who are enrolled in overseas campuses in Malaysia. These include Curtin University Malaysia, Swinburne University Malaysia, and Monash University Malaysia. The purpose of choosing these universities is that they are international universities with diversity. These universities have a significant number of international students as well as local students. The research objectives of the study, the researcher, focused on the notion of “relationship management” among students studying in institutes with diversity in the classroom. It was observed that undergraduate students had more tasks and group assignment during the semesters. Keeping this in view, it was assumed that undergraduate students as the target population is the best practice for this study.

## 4.5 Sampling

Sample for a research study is defined as the participants for the study, whereas sampling is a process of selecting a sample by the researcher. For the current study, the sample is undergraduate students at international universities in Malaysia, more precisely Australian universities' campuses in Malaysia. According to Israel (1992) sample size (200-500) is considered as a good practice for doing data analysis, i.e., multiple regression, analysis of covariance, and log linear analysis. The sample for this study is determined on the target population and total population.

Universities selected for this study are Curtin University Malaysia, Swinburne University Malaysia, and Monash University Malaysia. The researcher calculated sample on recent statistics for all three universities. The total number for current students in Curtin Malaysia is 4500, including 4000 local students and 500 international students (Edufair, 2018). Swinburne Malaysia currently has 3500 students which include 2900 domestic and 600 international students, whereas Monash Malaysia has the highest number of current students 7933 including 5755 local students and 2178 international students (Edufair, 2018).

The sample size for the current study is calculated by using the formula below (Eq. 1), presented by (Yamane 1967), discussed by (Israel, 1992).

**Eq. 1** 
$$n = \frac{N}{1+N(e)^2}$$

In the above formula,  $n$  is the sample size, and  $N$  is the total population. Whereas  $e$  is the level of precision which is ( $e = 0.05$ ). The sample size after the calculation is 390 respondents from all the universities.

**Table 4. 1: Target population Sample size**

University	Current Students	Target Responses
<b>Curtin Malaysia</b>	4500	109
<b>Swinburne Malaysia</b>	3500	86
<b>Monash Malaysia</b>	7933	195
<b>Total</b>	<b>15933</b>	<b>390</b>

Sample size calculation for the target population is done according to the ratio of the total number of students in each university. The researcher first calculated the total target sample size by using the formula mentioned above. In the second step, the percentage ratio for each university to get the target sample size was calculated and then added the three samples to get the overall proportion for each university's target sample size.

Using formula (Eq. 1), calculation is done accordingly, where  $n$  is the sample size,  $N$  is the total population of three universities (15933), and  $e$  is the level of precision which is ( $e = 0.05$ ).

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{15933}{1 + 15933(0.05)^2}$$

$$n = \frac{15933}{1 + 15933(0.0025)}$$

$$n = \frac{15933}{1 + 39.8325}$$

$$n = \frac{15933}{40.8325}$$

$$\mathbf{n = 390}$$

The target sample size is 390 and the researcher calculated the percentage ratio according to each university's total population.

$$\begin{array}{l} \text{Curtin University Malaysia} \\ \text{(sample size percentage)} \end{array} = \frac{4500}{15933} \times 100 = \mathbf{28\%} \text{ (109 participants)}$$

$$\begin{array}{l} \text{Swinburne University Malaysia} \\ \text{(sample size percentage)} \end{array} = \frac{3500}{15933} \times 100 = \mathbf{22\%} \text{ (86 participants)}$$

$$\begin{array}{l} \text{Monash University Malaysia} \\ \text{(sample size percentage)} \end{array} = \frac{7933}{15933} \times 100 = \mathbf{50\%} \text{ (195 participants)}$$

The technique used for sampling is convenience sampling. Convenience sampling is useful because respondents are easy to access. Researchers Kivunja (2015) and Brodaty et al. (2014) explained that this procedure of convenience sampling makes the process easy for researchers as it is used to determine ease of access and willingness of the participant. Other researchers like (Etikan, Musa, & Alkassim, 2016) are of the view that the convenience sampling technique supports quantitative studies as the researcher collects data from the pre-decided place and planned time. This research study is targeting the enrolled students in universities, so participant availability is a core concern and therefore collecting data is planned during the study periods of the semester. That then addresses any concerns of availability and access to undergraduate students in all three universities.

## **4.6 The Research Instrument**

In a quantitative research approach, survey questionnaires are normally utilized to collect data, and address research questions after analysis. The current research is quantitative, so the research instrument used is a survey questionnaire. A thorough study is done to observe what is the best practice for this type of research in terms of the instrument. For this research instrument, developing questions is key for successful data collection. The following headings explain why the survey questionnaire is used for the current study.

### **4.6.1 Designing the Questionnaire**

Questionnaire design for the current study is constructed after extensive literature review and research work in social media. To address research questions for this study, focused literature review on research methods in social media are consulted, considering that the questionnaire is designed according to the research objectives and research questions supported by the literature. The questionnaire design approach is adopted from previous social media studies, but formation of the questions in the survey are constructed with assistance from experts for this research. Based on variables in theoretical framework, items for each section in the survey questionnaire was constructed. After completing the draft, it went to a process of correction by experts, and after multiple reviews and comments from the principal supervisor, a draft was finalized for pre-testing.

The second phase for the questionnaire started after the completion of the pretest. After the pretest, questionnaire and pilot study were conducted. The sample selected was 10% of the actual sample. Once the pilot study was done, the final version of the questionnaire was prepared. The survey included participants information and a brief introduction to the research. This information allows participants to have a basic understanding of the research study. Also, formal procedures and protocols are addressed in this section to keep the process transparent for participants. The current study required ethical approval from the Human Research Ethics Committee, Australia. The final draft of the questionnaire

was attached as per, and this project is approved with ethics approval number (HRE2018-0601) labelled on every survey.

#### **4.6.2 Measurement Scale**

The measurement scale used for the questionnaire is a “5 Likert scale”. This was adopted after studying previous social media related studies. The approach for the interval used is in descending order from strongly agree to strongly disagree. The measurement is based on giving the specific number to each interval, as “strongly agree” given 5, “agree” given 4, “neutral” given 3, “disagree” given 2 and “strongly disagree” assigned 1. This assignment of number is used in data analysis using SPSS software.

#### **4.6.3 Measures Construct of Questionnaire**

The questionnaire consists of four sections. Section A contains demographic information of participants which include gender, age, student (local or international), university and student year in university. Section B is divided into two sections as it contains two variables (independent) which are “social media and communication tool.” Overall, this section contains nine items to measure. These measurable items are constructed to see the impact of social media as an integral communication tool. Section C contains one variable (dependent) which is “student learning”, and this variable has five items for measurement. These items are produced after thorough readings and consulting previous research studies. These items are constructed by the researcher with the help of an academic expert (supervisor). Section D consists of two variables (independent) “effective teams, relationship management, and goal reinforcement” and overall, 11 items. These constructs shall address the research questions as per study objectives after data analysis. Table 4.2 below is an illustration of items (measures) for each variable.

**Table 4. 2: Variables and measures**

<i>Variables</i>	<i>Measures</i>
<b>Social media</b> (Independent)	<ul style="list-style-type: none"> <li>- I use social media applications, i.e. WhatsApp, Facebook, Twitter, etc.</li> <li>- I am aware of social media applications, i.e. WhatsApp, Facebook, Twitter, etc.</li> <li>- Use a number of social media applications.</li> <li>- Social media has an influence in our daily routine.</li> <li>- Social media is a useful communication tool for team engagement.</li> </ul>
<b>Communication tool</b> (Independent)	<ul style="list-style-type: none"> <li>- It is easy for me to use social media to interact with my friends.</li> <li>- My friends and group mates in class use social media application to interact with one another.</li> <li>- We use social media applications for interacting as a group for assignments.</li> <li>- I experience some difficulties while using social media applications.</li> </ul>
<b>Student learning</b> (Dependent)	<ul style="list-style-type: none"> <li>- I am happy using social media applications for my study purposes.</li> <li>- I see improvement in my learning by using social media applications.</li> <li>- Social media applications resolve study problems in our group tasks and assignments.</li> <li>- Social media develops good communication among the group for learning.</li> <li>- I suggest that students use social media applications.</li> </ul>
<b>Effective teams</b> (Independent)	<ul style="list-style-type: none"> <li>- Social media is an effective tool for group tasks and assignments.</li> <li>- I am of the view that the quality of work in group tasks is increased by the use of social media.</li> <li>- In my opinion, social media is an effective tool for interaction in teamwork.</li> <li>- Social media creates good bonding between team members for group work.</li> </ul>
<b>Relationship management</b> (Independent)	<ul style="list-style-type: none"> <li>- Social media is an effective tool for relationship building.</li> <li>- It helps to build good relations while performing study tasks.</li> </ul>

- It reduces cultural differences among students in classroom.
- I am of the view that social media helps group members to have good relationships, irrespective of multicultural backgrounds.

**Goal reinforcement** (Independent)

- Social media reinforces goals in a study group task.
- Goals can be achieved better by using social media in group tasks.
- Frequent notification in social media applications ensure goals reinforcement.

## 4.7 Data Collection

Collection of data for study needs proper planning for achieving timelines and set milestones. For the current study, surveys were conducted using questionnaires. This survey was in print form and objectively distributed to the target sample. After getting ethics approval, the researcher started contacting target universities for data collection. For obtaining permission, a copy of the questionnaire and the ethics approval letter was attached for processing. The researcher also contacted the students using social media to get information for planning purposes. Once the universities gave permission for collecting data, the researcher prepared the printed questionnaires to be distributed in each university. Data collection was done in a time period of 40 days involving three universities. The researcher developed a schedule according to participants availability at their respective campuses. Data collection locations in all three universities were planned in order to obtain maximum participation. Best practices prove to be the café area, library, outside the study areas, near classrooms and common areas, as students were known to these venues were selected. The public holidays, university holidays or semester break, questionnaire administration considered.

The procedure for collecting data was simple and convenient for participants as well as the researcher. The researcher approached each participant and asked for participation in

the survey if they were undergraduate students. Initially, the researcher introduced himself and the research topic and briefly gave some information about the research topic. Once the participant was willing to participate in a survey, a questionnaire is handed over. In this above practice, almost every student was keen to participate, and the topic of research itself turned out to be of their interest. After distributing the survey questionnaire, the researcher gave some information, i.e., read the cover page, participant information statement and fill up according to instructions. The time for completing the survey was around 10 minutes per survey. Participants were also given a receipt having contact details about research and unique id number. In case if anytime they want to withdraw from the study, they can access and request the researcher.

## **4.8 Tests on Collected Data**

### **4.8.1 Normality**

Normality test is done before starting data processing for analysis. This test determines that data is normally and equally distributed. The result of this test shows how much data is appropriate. Normality test can be described through several tests, i.e. histograms, probability plots, and skew and kurtosis. For this study, the tests mentioned above are conducted to determine the appropriate and equal normal distribution of data.

### **4.8.2 Reliability**

Reliability test determines that the collected data is free from random errors. This helps in getting a better result of the collected data. Another aspect of reliability is consistency and appropriateness. For the current study, the reliability test was conducted and evaluated using the Cronbach alpha coefficient. According to Bonett and Wright (2015) explains Cronbach alpha as a widely used measure of reliability; also, it determines the “internal consistency” of the scale.

## 4.9 Data Analysis

Data analysis is done after collecting the data from the target population using the research instrument. For this study, data analysis will be carried out using SPSS version 23. This software allows to record data and uses different statistical tools and methods to get the outcome. This study is correlational and descriptive, so the researcher is using correlation and descriptive statistics for processing data and getting results.

In order to ensure the normality of collected data, normality tests including normal distribution, PP-plot, QQ-plot, will be used. The normality tests to be used are graphical. Furthermore, the researcher will ensure the reliability and consistency of scale measurement flow using Cronbach's Alpha Coefficient test.

Relationships between variables (dependent and independent) will be studied and identified using descriptive statistical analysis and correlation analysis. Each hypothesis will then be tested individually using the following t-test formula (Eq. 2).

Eq. 2

$$t = \frac{r}{\sqrt{\frac{1-r^2}{N-2}}}$$

## 4.10 Ethical Consideration

To conduct research, formalities, and procedures are followed to avoid any ethical issues involved in the study. This can be done by doing the process as per ethics approval committee protocols. After candidacy approval, the next milestone was preparing a questionnaire for data collection. Once the final draft of the research instrument was ready, it was then required to go through the ethical approval process. For this process, research proposal, research instrument, data management plan, and other formalities were required to fulfil. For the current study, ethical approval was acquired, and according to the requirements, ethics approval number (HRE2018-0601) has been mentioned on every leaf of the survey questionnaire. Also, in the first section of the questionnaire, this number is given for providing participants information. Considering the ethical issues, no personal

information was asked, i.e. (name or contact details). Participants are also given the right to withdraw from participation at any time. Considering this, a unique id number was provided in the form of receipt that contained researcher detail and contact information. So, if any time before thesis submission, participants can request to withdraw from participation in this study.

#### **4.11 Data Storage**

Data storage is normally done in two phases for research studies. The first phase includes the time of conducting a research study (data collection time), whereas the second phase is time after completion of a research study and thesis submission. The data is kept password protected on researcher PC, Laptop and external drive or USB. Once the data is completely collected, it was transferred to Curtin R drive and is protected according to university information technology services security and safeguarding protocols. The hard copy of data will be stored in the anti-fire box with password protected. The total volume of data available is 10 gigabytes. Data will also be saved on Curtin R drive after collection up to seven years (All other research with outcomes that are classed as Minor).

#### **4.12 Conclusion of Chapter**

The chapter has looked at various aspects and steps involved in the procedure of developing a research methodology that befits the needs of the current study. As such, the chapter looked at research framework/paradigm, research design, and research methods. This followed data collection discussion, leading to a discussion on research instruments. The chapter concluded with a discussion on administrative aspects, such as, ethical consideration and data storage. The following chapter discusses data analysis.

## **CHAPTER 5**

### **DATA ANALYSIS**

#### **5.1 Overview**

This chapter discusses the results of data analysis performed for this current research. In the first phase of this chapter, the survey response rate and demographic information is explained and presented. In the second phase of this chapter, the explanation of tests is presented, which includes normality and reliability tests for the collected data. In the final phase of this chapter, correlation analysis is performed to see the impact of independent variables on dependent variables. Finally, a brief conclusion of this chapter is presented.

#### **5.2 Pilot Study**

A pilot study for this research is conducted on completion of the pretest. The sample selection for the pilot study was 10% of the actual sample for this research. The survey questionnaires for the pilot study were distributed in three universities as these institutes were also used for the actual survey later. For the pilot study, 38 students participated from Curtin University Malaysia, Swinburne University Malaysia, and Monash University Malaysia. The pilot study has mainly two phases. In the first phase, the researcher distributed a survey questionnaire and collected data from participants. The second phase determined the internal consistency of the instrument constructs using Cronbach's Alpha values.

### 5.2.1 Results

The pilot study determined that the research instrument is valid to use for data collection and has no ambiguities for the participant while participating in the survey. The survey was distributed among undergraduate students of three universities and asked if it is easy to understand. While distributing the research instrument, few students responded to the information provided on the first page of the instrument. The participants were satisfied with a brief overview of the research that reflected the objectives of the study. The participants gave feedback on the instructions for the survey and were satisfied. Section A (demographic information) included “Gender”, “Age”, “Student” (local or international), “University” and “Year in University”. The Participants gave no suggestions as it was easy for them to fill this section with simple instructions. Section B and C, which contain independent and dependent variables with items for each variable, had few modifications after analyzing the pilot study. In “Section B” the item one and two in variable “social media” were modified as initially, the statements were “I use social media applications” and “I am aware of social media applications”. The modifications were done on the suggestion from a few participants to mention application in the statements for better understanding. The modified statements are “I use social media applications, i.e. WhatsApp, Facebook, Twitter, etc.” and “I am aware of social media applications, i.e. WhatsApp, Facebook, Twitter, etc.”. In “Section C” under student’s learning (dependent variable) in the pilot study, there were four items. The researcher analyzed that during discussion and pilot survey; participants gave feedback on suggesting students’ use of social media. This suggestion aligned to the study objectives, so the researcher added the fifth item “I suggest students use social media applications” under “student’s learning” section C. There was not much modification as participants gave positive feedback for research instrument.

Internal consistency of the instrument constructs is tested by the researcher analyzing the Cronbach’s Alpha value. There are six variables for this current study: one dependent and five independent variables. Cronbach’s Alpha tested all six variables to see the consistency of the items for each variable. According to Kline (2005), the value of

Cronbach's Alpha is considered good if it is 0.7 and above. The value close to 1 is considered as the best, and it shows that there is high internal consistency between items in an instrument. Table 5.1 below shows the Cronbach's Alpha for all six variables to determine the internal consistency. For the pilot study, the values of Cronbach's alpha for all six variables were close to or greater than 0.8, which is considered good. The reliability test was done for six variables, and the total number of items in the instrument is 25.

**Table 5. 1: Cronbach's Alpha (Pilot Study)**

<b>Reliability Statistics</b>		
<b>Variables</b>	<b>Cronbach's Alpha</b>	<b>N of Items</b>
Social Media ( <i>Independent</i> )	.729	4
Communication Tool ( <i>Independent</i> )	.813	5
Student Learning ( <i>Dependent</i> )	.840	5
Effective Teams ( <i>Independent</i> )	.818	4
Relationship Management ( <i>Independent</i> )	.776	4
Goal Reinforcement ( <i>Independent</i> )	.802	3

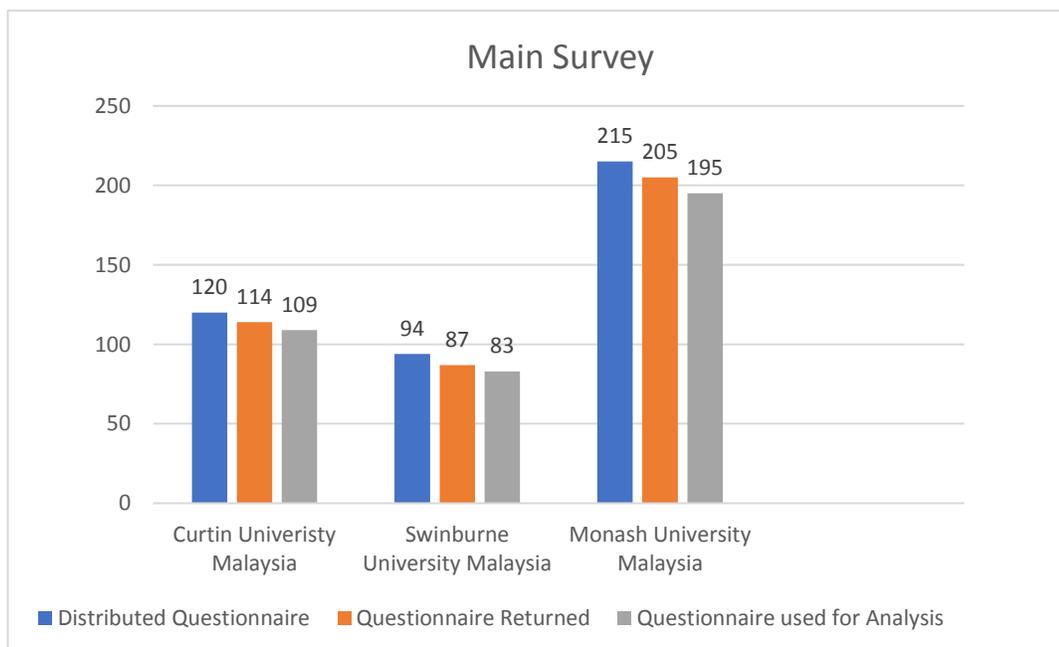
### 5.2.2 Discussion

The pilot study is conducted to see the validity of the instrument, so in the later phase of the study it is used for the actual data collection for the research study. From findings, it was evident that the participants were satisfied with the constructs and design of the research instrument. According to Connelly (2008), pilot study ensures the clarity of the items in a research instrument. Connelly (2008) elaborates pilot study as a research instrument that is free from ambiguous and unclear statements that question the validity of data collection instrument. Another aspect of conducting the pilot study is to analyze the participant's approach to participate in a research study. It determines the level of acceptance to the statements or items in the survey questionnaire presented to them. If the content in the survey is easy to understand and clear, the response rate becomes higher.

For this current research, the pilot study determined the validity of the research instrument. The participants participated and gave suggestions to improve the content in sections which are reflected by doing modifications in section "B" and "C" of the survey. Furthermore, the study population is undergraduate students, and the researcher had discussions on study objectives while distributing the survey questionnaire. It was evident that students use social media applications for interacting among classmates. The researcher also found that choosing the undergraduate students as the study population was the right decision. As per discussions, they have more assignments and group tasks as compared to other levels of students, i.e., postgraduates. Reliability of the instrument was a significant aspect of the pilot study. The findings revealed that each variable has good Cronbach's alpha value, ensuring the internal consistency of the items.

### 5.3 Main Survey

The actual survey was conducted after the researcher completed the pilot study. The survey questionnaire was modified after analyzing the results of the pilot study. The researcher distributed the survey questionnaire in paper form by visiting all three universities physically by following data collection protocols for each university. For the actual survey, the number of respondents from each university was calculated using convenience sampling, and the total population was 390 undergraduate students. The approach of collecting data by visiting universities physically ensured maximum response and interaction with every single respondent. The interaction with the respondents was helpful to get their viewpoint regarding the research study. The researcher distributed overall 429 survey questionnaires in three universities. Figure 5.1 below, illustrates the total distributed, returned questionnaires and questionnaires used for data analysis.



**Figure 3: Main Survey**

The required sample was 390 respondents, whereas the researcher collected an extra 10% of the actual population for contingency, making the count 429. The return rate was

relatively high, and the researcher managed to collect 406 responses out of 429, which was 94.6% response rate. Once the data was collected, all the responses were reviewed, and incomplete or invalid responses were discarded by the researcher. The number of valid responses reduced to 383, which is 89.27% of total collected responses, which is quite a high response rate. This procedure filtered the questionnaires, perfect for use in data analysis.

### 5.3.1 Demographic Information

Demographic information of respondents is presented in this section. It determines the response rate and pattern once data collected from the targeted sample. Using frequency, the researcher analyzed and presented demographic information. Series of tables showing the demographic information of respondents for this research study.

**Table 5. 2: Respondent frequency (Gender)**

<b>Gender</b>			
		<b>Frequency</b>	<b>Valid Percent</b>
<b>Valid</b>	<b>Male</b>	199	52.0
	<b>Female</b>	184	48.0
	<b>Total</b>	383	100.0

The above table 5.2 shows the frequencies of the respondents by gender. The researcher expected mix response from both male and female participants as of a reason that during pilot study male and female participants participated almost with equal response ratio. The number of male respondents was 199, and female respondents were 184. Male respondents were slightly more than female respondents with just a 4% higher rate. It is evident that the participation of male and female with a percentage of 52% and 48% respectively was a significant mixed response for this research study.

**Table 5. 3: Respondent frequency (Age)**

<b>Age</b>			
		<b>Frequency</b>	<b>Valid Percent</b>
<b>Valid</b>	17 - 19 y	222	58.0
	20 - 22 y	126	32.9
	23 – 25 y	28	7.3
	Above 25 y	7	1.8
	Total	383	100.0

The above table 5.3 shows the response rate of the target population by age group. Considering undergraduate studies, the researcher divided the age group into four categories. The significant participation was from the first age group “17 – 19 years”, and the response frequency was 222, with 58% of the overall population. The frequencies significantly decreased with every age group as students aged “20 – 22 years” were 126 with 32.9%, “23 – 25 years” the frequency was 28 with 7.3% of the total collected sample. The least response was observed from last age group “above 25 years”, only seven students participated with 1.8% of the total sample collected.

**Table 5. 4: Respondent frequency (Student)**

<b>Student</b>			
		<b>Frequency</b>	<b>Valid Percent</b>
<b>Valid</b>	<b>Domestic</b>	208	54.3
	<b>International</b>	175	45.7
	<b>Total</b>	383	100.0

The above table 5.4 shows the participation of undergraduate students by domestic and international students. In this research, the researcher focused on international universities in Malaysia to ensure the significant participation of international students. The grounds for this approach led to the interconnection between domestic and international students in a learning environment. The domestic undergraduate students participated in the main survey was 208 (respondents) with 54.3% of the total collected sample. Whereas, as for international students from different countries, the response rate was 175 (respondents) with 45.7% of the total sample, which was a significant contribution.

**Table 5. 5: Respondent frequency (University)**

<b>University</b>			
		<b>Frequency</b>	<b>Valid Percent</b>
<b>Valid</b>	<b>Curtin</b>	108	28.2
	<b>Swinburne</b>	83	21.7
	<b>Monash</b>	192	50.1
	<b>Total</b>	383	100.0

The above table 5.5 shows the participants from selected universities. Three universities selected were Curtin University Malaysia, Swinburne University Malaysia, and Monash University Malaysia. The students from Monash University Malaysia were 50.1% of the total population with 192 (respondents). The study population from Curtin University Malaysia was the second highest with 108 (respondents) and 28.2% of the total collected sample. The response from Swinburne University Malaysia was 83 (respondents) and 21.7% of the total collected sample.

**Table 5. 6: Respondent frequency (Year in University)**

<b>Year in University</b>			
		<b>Frequency</b>	<b>Valid Percent</b>
<b>Valid</b>	<b>1st year</b>	213	55.6
	<b>2nd year</b>	54	14.1
	<b>3rd year</b>	95	24.8
	<b>4th year</b>	21	5.5
	<b>Total</b>	383	100.0

The above table 5.6 shows the frequency of response for the main survey according to the study year of undergraduate students. According to the above statistics, students in the “1<sup>st</sup> year” of their degree responded to more than half of the total collected sample. The frequency for the “1<sup>st</sup> year” was 213 (respondents) with 55.6% of the total sample collected. The students from “2<sup>nd</sup> year” and “3<sup>rd</sup> year” had a response rate of 54 (respondents) and 95 (respondents), respectively, with 14.1% and 24.8% of the total sample collected. The least participation was observed from “4<sup>th</sup>-year” students, 21 (respondents) with 5.5% of the total collected sample.

### 5.3.2 Descriptive Statistics

This section discusses the descriptive statistics of the current study. Statistics in tabular form are showing the summary of means and standard deviation for all the items for each variable. Furthermore, values of skewness and kurtosis are also presented in table 5.7. The research instrument used is a five-point Likert scale that measured responses from strongly agree with score 5 to strongly disagree with score 1. The mean score for each variable recorded above 3.00. For effective data analysis and results, data normality is observed by getting values of Skewness and Kurtosis for each variable. According to Sekaran (2003), Skewness and Kurtosis values should be in between -2 to +2. For this current study, Skewness and Kurtosis values observed are between +1.60 to -1.95, which satisfy the rule of thumb for data normality.

The researcher observed that the variables having high means were “social media”, “communication tool” and “student learning”. The least mean score recorded is for “effective teams”. From the researchers’ point of view, respondents thought that social media is significant and plays a positive role in studies. Also, social media applications are useful as integral communication tools to use in the study environment. Furthermore, respondents gave more importance to students’ learning as a crucial factor for this study. In the descriptive statistical analysis, the researcher analyzed the opinion of respondents against each variable item. SPSS is used to analyze statistics following required processes. In descriptive statistics, against each variable, there are certain measurement items or statements. These items are given a specific identifier to distinguish each variable item. Below is elaboration for each variable with descriptive statistics according to each measurement item.

### 5.3.2.1 Descriptive Statistics of “Social Media” (Independent Variable)

Descriptive statistics for independent variable “Social Media” show high value for the mean. That describes the researcher presented the items in this variable according to the aim of the study. Table 5.7 below shows the mean for this independent variable is 3.49, with a standard deviation of 0.65. Furthermore, the values for skewness and Kurtosis are illustrated in the table below, -0.02 and -1.04 respectively, which shows the spread of normal data. This variable contains four variable measurement items (statements). Respondents are asked statements about social media applications, awareness, and usage. Respondents responded with highest mean 3.77 on statements “I use a number of social media applications”. It was also observed that the respondents think that there is an influence of social media in their daily routine, that can be seen from the mean value of the statement “Social media has an influence on our daily routine”. Overall respondents are familiar with social media applications like Facebook, Twitter, and WhatsApp. They are using these applications in their routine.

**Table 5. 7: Descriptive statistics (Social Media)**

		<b>Mean</b>	<b>SD</b>	<b>Skewness</b>	<b>Kurtosis</b>
<b>Social Media</b>		<b>3.49</b>	<b>0.65</b>	<b>-0.02</b>	<b>-1.04</b>
<b>SM1</b>	I use social media applications, i.e. WhatsApp, Facebook, Twitter etc.	3.26	1.0	-1.78	-1.04
<b>SM2</b>	I am aware of social media applications, i.e. WhatsApp, Facebook, twitter etc.	3.28	.949	-1.72	-0.69
<b>SM3</b>	I use a number of social media applications.	3.77	.850	-1.81	-0.91
<b>SM4</b>	Social media has an influence on our daily routine.	3.64	.779	-0.64	-1.60

### 5.3.2.2 Descriptive Statistics of “Communication Tool” (Independent Variable)

Communication tool is the independent variable and is of significance as this variable influence other mediator variables in this research study. The table shows that this independent variable also holds a high mean score of 3.44 among all variables in this

study. The standard deviation for this variable is 0.57. Skewness and Kurtosis are respectively -0.16 and -0.66, which shows the data normality for this independent variable. This variable consists of five measurement items. Participants were asked about their opinion about social media as a useful communication tool. As this study aims to see the effectiveness in teams using social media, so statements were asked about team engagement, easiness in interaction and any difficulties in using social media applications. The researcher observed that it is evident from data collected that students are using social media applications to interact in the classroom. The highest means were observed against statements “My friends and group mates in class use social media application to interact with one another” and “We use social media applications for interacting as a group, for assignments”. Mean values for these statements are 3.78 and 3.64, respectively. The standard deviation for these statements is 0.85 and 0.77, respectively. The researcher overall analyzed that social media is helping students to interact in a group or team to do the assignment or team tasks.

**Table 5. 8: Descriptive statistics (Communication tool)**

		<b>Mean</b>	<b>SD</b>	<b>Skewness</b>	<b>Kurtosis</b>
<b>Communication Tool</b>		<b>3.44</b>	<b>0.57</b>	<b>-0.16</b>	<b>-0.66</b>
<b>CT1</b>	Social media is a useful communication tool for team engagement.	3.26	0.99	-1.68	-1.01
<b>CT2</b>	It is easy for me to use social media to interact with my friends.	3.25	0.94	-1.22	-0.54
<b>CT3</b>	My friends and group mates in class use social media application to interact with one another.	3.78	0.85	-1.81	-0.97
<b>CT4</b>	We use social media applications for interacting as a group for assignments.	3.64	0.77	-0.71	-1.58
<b>CT5</b>	I experience some difficulties while using social media applications.	3.27	0.94	-1.68	-0.62

### 5.3.2.3 Descriptive Statistics of “Students’ Learning” (Dependent Variable)

Student’s learning is the only dependent variable for this research study. The construct measures are developed considering the aim and objective of the study. The number of items for this dependent variable is five. Participants were asked for their concern about social media if they are happy to use it for study purposes. Considering this study, a classroom study, the researcher asked participants about the improvement observed by them using social media application, developing good communication in the group and if it helps to resolve problems in group tasks. The last statement for this variable describes if the participant suggests usage of social media for study purposes. The results show that participants are of the view that social media applications assist in resolving problems in group tasks, as the statement “Social media applications resolve study problems in our group tasks and assignments” has highest mean value 3.77 among all other. The standard deviation for this statement is 0.85, whereas Skewness and Kurtosis values are -1.64 and -1.53, respectively.

**Table 5. 9: Descriptive statistics (Student’s learning)**

		<b>Mean</b>	<b>SD</b>	<b>Skewness</b>	<b>Kurtosis</b>
<b>Students’ Learning</b>		<b>3.42</b>	<b>0.62</b>	<b>-0.024</b>	<b>-1.048</b>
<b>SL1</b>	I am happy using social media applications for my study purposes.	3.22	0.99	-1.72	-1.24
<b>SL2</b>	I see improvement in my learning by using social media applications.	3.26	1	-1.94	-0.69
<b>SL3</b>	Social media applications resolve study problems in our group tasks and assignments.	3.77	.85	-1.64	-1.53
<b>SL4</b>	Social media develops good communication among the group for learning.	3.67	.78	-0.32	-1.95
<b>SL5</b>	I suggest that students use social media applications.	3.19	.97	-0.36	-1.63

### 5.2.3.4 Descriptive Statistics of “Effective Teams” (Mediator)

Effective team is an independent variable for this research study, but it is used as a mediator. Overall, in the theoretical framework, there are five independent variables and one dependent variable. Variables, “effective team”, “relationship management”, and “goal reinforcement” are used as mediators (independent variables). These variables have influence from other independent variables to see the relationship that assists in achieving the aim of research and hypothesis development.

For this first mediator (independent variable), participants are asked about the effectiveness of social media in the group assignment. Furthermore, if the quality of work improves using such a platform and the development of good bonding among teammates. The highest score of mean 3.59 is observed for the statement “Social media creates good bonding between team members for group work” with a standard deviation of 0.83. Although the overall mean for this variable is comparatively low, but the opinion from the respondent is significant and equal importance to obtain results. The overall mean for all four items in this variable is 3.34, with a standard deviation of 0.74. To ensure the normality of data, Skewness and Kurtosis are recorded -0.008 and -1.48, respectively. The table below shows the statistics for all the items for this effective team.

**Table 5. 10: Descriptive statistics (Effective team)**

		<b>Mean</b>	<b>SD</b>	<b>Skewness</b>	<b>Kurtosis</b>
		<b>3.34</b>	<b>0.74</b>	<b>-0.008</b>	<b>-1.48</b>
<b>Effective Team</b>					
<b>ET1</b>	Social media is an effective tool for group tasks and assignments.	3.21	1	-1.15	-1.93
<b>ET2</b>	I am of the view that the quality of work in group tasks is increased by the use of social media.	3.26	.96	-1.47	-1.36
<b>ET3</b>	In my opinion, social media is an effective tool for interaction in teamwork.	3.27	.94	-1.72	-0.66
<b>ET4</b>	Social media creates good bonding between team members for group work.	3.59	.83	-1.93	-0.93

### 5.3.2.5 Descriptive Statistics of “Relationship Management” (Mediator)

Relationship management is the second independent variable used as a mediator. The researcher asked the participants questions about the relationship building using social media applications. Statements were presented to ask if social media is an effective tool for building a good relationship, relationship during study tasks, reduction in cultural differences and relationship building when in a team members are from a multicultural background. The overall mean score was slightly higher than “effective team” but had a significant mean value of 3.37 with a standard deviation of 0.69. to ensure the normality of the data, the values for Skewness and Kurtosis are -0.96 and -0.59. The highest item score is the mean value for the statement “I am of the view that social media helps group members to have good relationships, irrespective of multicultural backgrounds” with a standard deviation of 0.95.

The researcher observed that the participants are of the view that social media can be of great significance for creating bonding among team members from different backgrounds. This advocates the importance of social media applications effectiveness in relationship management. The results in the table below are considered as vital to answer the third research question.

**Table 5. 11: Descriptive statistics (Relationship management)**

		<b>Mean</b>	<b>SD</b>	<b>Skewness</b>	<b>Kurtosis</b>
<b>Relationship Management</b>		<b>3.37</b>	<b>0.69</b>	<b>-0.96</b>	<b>-0.59</b>
<b>RM1</b>	Social media is an effective tool for relationship building.	3.25	0.98	-1.07	-1.95
<b>RM2</b>	It helps to build good relations while performing study tasks.	3.28	0.95	-1.70	-1.22
<b>RM3</b>	It reduces cultural differences among students in the classroom.	3.29	0.92	-1.36	-0.36
<b>RM4</b>	I am of the view that social media helps group members to have good relationships, irrespective of multicultural backgrounds.	3.67	0.79	-0.64	-1.81

### 5.3.2.6 Descriptive Statistics of “Goal Reinforcement” (Mediator)

Goal reinforcement is the last independent variable but used as a mediator. The researcher is considering the connection of mediators (Independent variables) that are getting influenced by the independent variable “Communication tool”. The results for mediators are equally important for testing hypotheses in the next chapter. The overall mean was considered high, with an overall mean score of 3.40 and a standard deviation of 0.57. The Skewness and Kurtosis values are -1.81 and 1.07, respectively. The participants are asked three statements that included if social media reinforces goals in group work, achieving goals in a better way and if notifying strategy is effective to achieve common goals in study groups. The highest means are observed for statements “Social media reinforces goals in study group tasks” and “Goals can be achieved better by using social media in group tasks”. Standard deviation values are observed 0.78 and 0.68, respectively.

**Table 5. 12: Descriptive statistics (Social Media)**

		<b>Mean</b>	<b>SD</b>	<b>Skewness</b>	<b>Kurtosis</b>
<b>Goal Reinforcement</b>		<b>3.40</b>	<b>0.57</b>	<b>-1.81</b>	<b>1.07</b>
<b>GR1</b>	Social media reinforces goals in study group tasks.	3.56	0.78	0.13	-0.33
<b>GR2</b>	Goals can be achieved better by using social media in group tasks.	3.54	.68	0.96	0.14
<b>GR3</b>	Frequent notification in social media applications ensure goals reinforcement.	3.09	.66	1.60	1.24

### 5.3.3 Normality Test

Normality of data represents the distribution of scores. Normality is a bell-shaped curve that shows the lower scores for variables spreading on two edges, with the highest score in the middle. The scores are basically response frequencies for each variable. The results from the normality test are represented below that includes representation in the form of a histogram, Q-Q plot, and box plot. For normality, values of skewness and kurtosis are significant.

**5.3.3.1 Skewness and Kurtosis:** Skewness is analyzed to check the normal distribution of data. This test ensures that the data is distributed according to the mean of the variable. Skewness values can be normal or with  $-/+$  values. If the value is normal, that shows that the data is distributed horizontal symmetry. If the value is negative, it shows that ample data is distributed in horizontal symmetry on the right side. For the positive value of skewness, most of the data is distributed horizontally on the left side.

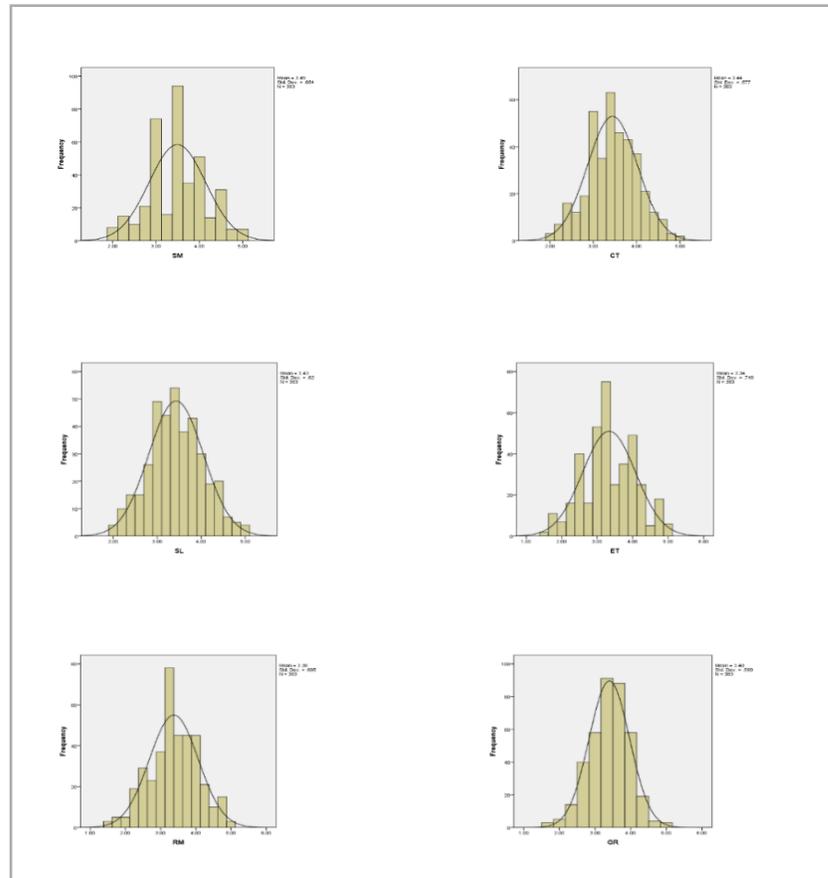
Kurtosis is also used for testing the normality of the data. This shows the peak distribution of the data in the form of bell-shaped curve. The values for kurtosis can be normal or with  $-/+$  values. If the values are normal, then it means the value is close to zero, which defines the perfect data distribution. The negative value shows the flat bell-shaped curve, whereas the positive values show the bell-shaped curve at peak. The values for skewness and kurtosis should be in between  $-1.96$  to  $+1.96$  (Kim, 2013). If the values are close to zero or zero, that describes the perfect normality of data (Dikko, 2016). For the current study, the values for each variable satisfy the rule of thumb for Skewness and Kurtosis values in data normality. The table below shows the values for each variable.

**Table 5. 13: Skewness and Kurtosis**

<b>Variable</b>	<b>Skewness</b>	<b>Kurtosis</b>
Social media	-0.02	-1.04
Communication tool	-0.16	-0.66
Student learning	-0.024	-1.048
Effective teams	-0.008	-1.48
Relationship management	-0.96	-0.59
Goals reinforcement	-1.81	1.07

### 5.3.3.2 Histogram

The normality of data can be analyzed by various approaches. The histogram represents the frequency of the response and is used to observe if data is normal. The figure below shows the normal distribution of data in graphical bell curve for all six variables.

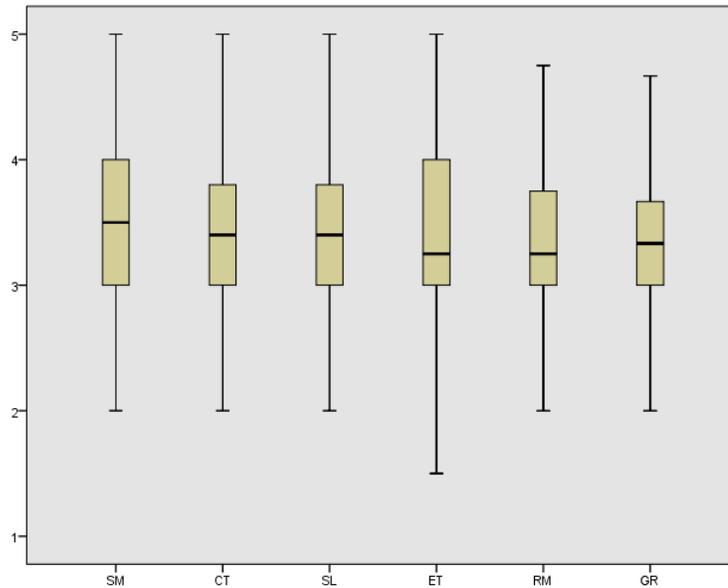


**Figure 4: Histograms for research variables**

The histogram is a graphical representation to see non-normal data in the form of graphical representation. The data can be left skewed, right skewed or in the middle. The figure below is a graphical representation of data that it is normally distributed for all variables. According to the statics, analyzing the shape of curves for all variables and values of skewness and kurtosis, data is normally distributed.

### 5.3.3.3 Box Plot

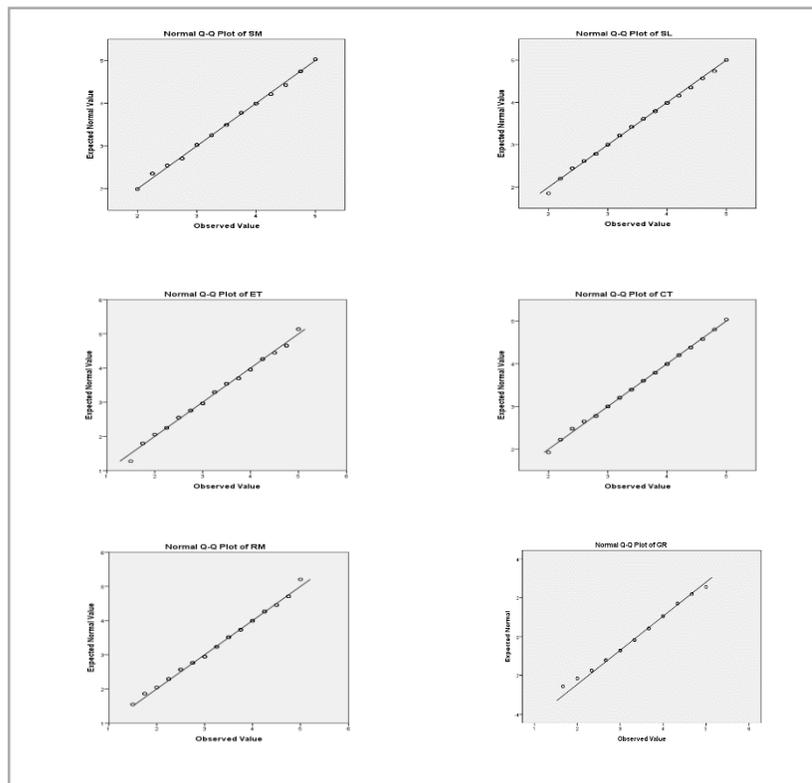
Box plot is another way to see the normality of data. For the current research, the box plot test is conducted to see data normality. Box plot demonstrates the center and the spread of data if it is normal or not. In other words, the box plot shows the spread of data by a mean and interquartile range of data. The figure below illustrates the data spread in the box plot. In the box plot, the two lines outside the box are known as whiskers, that show the highest and the lowest value of data for each variable. For this study, although not all the boxes are symmetric in the data representation in the box plot, they are acceptable for data normality, as there is not any uneven pattern in illustration.



**Figure 5: Box Plot for Research Variables**

### 5.3.3.4 Q-Q Plot

Q-Q plot is one of the effective tests to identify if data is normally distributed or not. The test results for the Q-Q plot are graphical illustrations for variable data normality. The figure below illustrates the normality of data for the current research. Defining the normal data using a Q-Q plot, the actual collected data has to be on the line or touching the line. The dots in the graph represents the actual data in the figure. If the dots are not closer or deviated from the line it indicates non-normal data. For this study, data for all variables were on the line or closer to the line with minimal deviation, so the data were recorded as normally distributed.



**Figure 6: Q-Q Plot for Research Variables**

### **5.3.4 Reliability**

The reliability test in any research ensures the level of internal consistency. This consistency is among the measurable items that ensures consistency in results. Cronbach's alpha coefficient is the measuring scale that is used to see the internal consistency of measurable items (Taber, 2018). According to Tavakol and Dennick (2011) high value of Cronbach's alpha coefficient determines the high level of consistency between measurable items. Tavakol and Dennick (2011) advocate that if the level value is 0.7 or above is considered as good reliability for collected data. The level of reliability closer to 0.9 is considered as strong reliability. According to Sun, Li, Jin, Fan, and Wang (2011), Cronbach's alpha coefficient above 0.6 is acceptable. For this research study, the researcher did reliability test and recorded Cronbach's alpha coefficient for all the variables. The findings from reliability test showed the values were between 0.633 to 0.798. The table below shows the Cronbach's alpha values for the variables used in this research study

**Table 5.14 Reliability test summary for study variables**

	Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha Value
<b>Social Media</b>				<b>.703</b>
	<b>SM1</b>	.583	.574	
	<b>SM2</b>	.583	.575	
	<b>SM3</b>	.537	.611	
	<b>SM4</b>	.267	.753	
<b>Communication Tool</b>				<b>.633</b>
	<b>CT1</b>	.587	.463	
	<b>CT2</b>	.612	.455	
	<b>CT3</b>	.470	.541	
	<b>CT4</b>	.197	.658	
	<b>CT5</b>	.123	.705	
<b>Student Learning</b>				<b>.673</b>
	<b>SL1</b>	.625	.518	
	<b>SL2</b>	.623	.522	
	<b>SL3</b>	.502	.591	
	<b>SL4</b>	.297	.672	
	<b>SL5</b>	.142	.744	
<b>Effective Teams</b>				<b>.798</b>
	<b>ET1</b>	.798	.642	
	<b>ET2</b>	.870	.607	
	<b>ET3</b>	.816	.641	
	<b>ET4</b>	.075	.951	
<b>Relationship Management</b>				<b>.730</b>
	<b>RM1</b>	.731	.523	
	<b>RM2</b>	.860	.441	
	<b>RM3</b>	.801	.493	
	<b>RM4</b>	.132	.793	
<b>Goal Reinforcement</b>				<b>.710</b>
	<b>GR1</b>	.545	.603	
	<b>GR2</b>	.556	.585	
	<b>GR3</b>	.490	.664	

## 5.4 Correlation Analysis

Correlation analysis is conducted for this research study to observe the relationship between variables. Correlation table below illustrates the relationship and is discussed in the next section.

**Table 5.15 Correlation Matrix**

		Correlations					
		SM	CT	SL	ET	RM	GR
SM	Pearson Correlation	1	.378**	.473**	.332**	.491**	.094
	Sig. (2-tailed)		.001	.000	.000	.000	.007
	N	383	383	383	383	383	383
CT	Pearson Correlation	.378**	1	.335**	.387**	.256**	.036
	Sig. (2-tailed)	.001		.000	.000	.000	.002
	N	383	383	383	383	383	383
SL	Pearson Correlation	.473**	.335**	1	.568**	.100	.030
	Sig. (2-tailed)	.000	.000		.000	.077	.062
	N	383	383	383	383	383	383
ET	Pearson Correlation	.332**	.387**	.568**	1	.060	.111*
	Sig. (2-tailed)	.000	.000	.000		.001	.030
	N	383	383	383	383	383	383
RM	Pearson Correlation	.491**	.256**	.100	.060	1	.021
	Sig. (2-tailed)	.000	.000	.077	.001		.685
	N	383	383	383	383	383	383
GR	Pearson Correlation	.094	.036	.030	.111*	.021	1
	Sig. (2-tailed)	.007	.002	.062	.030	.685	
	N	383	383	383	383	383	383

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

### 5.4.1 Correlation Results

#### 5.4.1.1 Correlation between social media and communication tool:

Correlation analysis revealed the results of all the variables and the relationship. To determine the relationship between social media and communication tool, values are derived from the correlation matrix in table 5.15. There is a significant correlation between social media and communication tool as the correlation coefficient is 0.378 with sig value 0.001. It is evident that from sig value that there is a considerable positive correlation between the two variables.

#### **5.4.1.2 Correlation between social media and goals reinforcement**

To determine the correlation between social media and goals reinforcement, correlation analysis is carried out. Values are taken from table 5.15, where the correlation coefficient for the two variables comes out to be 0.094 and a sig value of 0.007 with N=383. The determined values show that there exists a weak positive correlation between social media and goals reinforcement.

#### **5.4.1.3 Correlation between social media and relationship management**

A correlation analysis conducted to determine the correlation between social media and relationship management exhibits a moderate positive correlation between the two variables. This correlation is evident from the correlation coefficient, i.e. 0.491 with sig value 0.000, where N=383. Such correlation is considered as good and acceptable.

#### **5.4.1.4 Correlation between social media and effective teams**

The result of the correlation analysis of social media and effective teams gave a correlation coefficient of 0.332 and sig value of 0.000 with N=383. From these values, it is determined that there exists a considerable positive correlation between the two variables.

#### **5.4.1.5 Correlation between goals reinforcement and student learning**

In order to determine the correlation between goals reinforcement and student learning, a correlation analysis, as shown in the correlation matrix above, is carried out. The value of the correlation coefficient of the two variables is calculated to be 0.030. The sig value is 0.062 with N=383. The derived values indicate a weak negative correlation between goal reinforcement and student learning.

#### **5.4.1.6 Correlation between relationship management and student learning**

A correlation analysis conducted to determine the correlation between relationship management and student learning exhibits a weak positive correlation between the two variables. This correlation is evident from the correlation coefficient, i.e. 0.100 with sig value 0.007, where N=383. Such correlation is considered as good and acceptable.

#### **5.4.1.7 Correlation between effective teams and student leaning**

In order to determine the correlation between effective teams and student learning, a correlation analysis is carried out, displayed in table 5.15. The value of the correlation coefficient of the two variables is calculated to be 0.568. The sig value is 0.000 with N=383. The derived values are evidence of a good positive correlation between the two variables.

### **5.4.2 Hypotheses testing**

Hypotheses are tested using the formula (Eq.2) below,

$$t = \frac{r}{\sqrt{\frac{1-r^2}{N-2}}}$$

Where “r” is a correlation between two variables, and “N” is the sample size. For using this formula, it is assumed that the variables are scale variables. The normality of data for each variable is also determined as normal. For each hypothesis testing, the research hypothesis and null hypothesis is presented. Research hypotheses are actual hypotheses represented as  $H_R$  and null hypotheses as  $H_0$ . The assumption for research hypotheses and null hypotheses for testing is presented below where r is the correlation coefficient.

$$H_R: r \neq 0$$

$$H_0: r = 0$$

The researcher calculated the correlation for all the variables and used the formula mentioned above to get hypotheses tested. In the formula, (N-2) is df (degree of freedom) and its value is acquired from t distribution table. That df is cut off value for each hypothesis. Once all the values are calculated using the above formula, they are checked on the curve whether to accept or reject.

**H<sub>1</sub>:**

*H<sub>1</sub>: Social media has a positive influence on communication tool.*

Using the above equation (Eq.2) H<sub>1</sub> is tested.

$$t = \frac{0.378}{\sqrt{\frac{1 - 0.378^2}{383 - 2}}}$$

$$t = \frac{0.378}{\sqrt{\frac{0.857}{381}}}$$

$$t = \frac{0.378}{0.047}$$

$$t = 8.04$$

From the above calculation, the value of t is 8.04, which is higher than the cut off value. The degree of freedom for analysis at confidence level 0.05 against N (total sample) is ± 1.96. The result after testing hypothesis H<sub>1</sub> is skewed on the positive side of the curve with a value of 8.04 that shows that there is a positive relationship between social media and communication tool, so H<sub>1</sub> is accepted.

**H<sub>2</sub>:**

*H<sub>2</sub>: Social media as an integral communication tool has a positive impact on goals reinforcement.*

Using the above equation (Eq.2), H<sub>2</sub> is tested.

$$t = \frac{0.094}{\sqrt{\frac{1 - 0.094^2}{383 - 2}}}$$

$$t = \frac{0.094}{\sqrt{\frac{0.991}{381}}}$$

$$t = \frac{0.094}{0.051}$$

$$t = 1.84$$

Testing of H<sub>2</sub> reveals that the value of  $t$  is 1.84. The degree of freedom for analysis at confidence level 0.05 against N (total sample) is  $\pm 1.96$  (df). The value of  $t = 1.84$ , which is smaller than the cut off value (df). Thus, H<sub>2</sub> is rejected as there is a very weak correlation between social media and goals reinforcement, i.e.  $r = 0.094$ .

**H<sub>3</sub>:**

*H<sub>3</sub>: Social media as an integral communication tool has a positive influence on relationship management.*

Using the above equation (Eq.2), H<sub>3</sub> is tested.

$$t = \frac{0.491}{\sqrt{\frac{1 - 0.491^2}{383 - 2}}}$$

$$t = \frac{0.491}{\sqrt{\frac{0.758}{381}}}$$

$$t = \frac{0.491}{0.044}$$

$$t = 11.15$$

From the above calculation, the value of t is 11.15, which is higher than the cut off value. The degree of freedom for analysis at confidence level 0.05 against N (total sample) is  $\pm 1.96$ . The result after testing hypothesis  $H_3$  is skewed on the positive side of the curve with a value of 11.15. The findings determine the positive relationship between social media and relationship management, as correlation coefficient is 0.491 with sig value of 0.000, it is evident that there is a positive considerably good correlation between these variables, so  $H_3$  is accepted.

**H<sub>4</sub>:**

*H<sub>4</sub>: Social media as an integral communication tool has a positive influence on effective teams.*

Using the above equation (Eq.2),  $H_4$  is tested.

$$t = \frac{0.332}{\sqrt{\frac{1 - 0.332^2}{383 - 2}}}$$

$$t = \frac{0.332}{\sqrt{\frac{0.889}{381}}}$$

$$t = \frac{0.332}{0.048}$$

$$t = 6.91$$

From the above calculation, the value of t is 6.91, which is greater than the cut off value. The degree of freedom for analysis at confidence level 0.05 against N (total sample) is  $\pm 1.96$ . The calculation results show that the value of t is skewed on the positive side of the curve and is greater than the cut off value, so  $H_4$  is accepted. It is evident from the correlation coefficient between social media, and effective teams is .332, which is an acceptable positive correlation. Hence, social media can be used to observe effectiveness in teams.

**H<sub>5</sub>:**

*H<sub>5</sub>: Goals reinforcement has a positive influence on student learning.*

Using the above equation (Eq.2),  $H_5$  is tested.

$$t = \frac{0.030}{\sqrt{\frac{1 - (-0.030)^2}{383 - 2}}}$$

$$t = \frac{0.030}{\sqrt{\frac{1.0009}{381}}}$$

$$t = \frac{0.030}{0.051}$$

$$t = 0.58$$

From the above calculation, the value of t statistic is 0.58, which is less than the cut off value. The degree of freedom for analysis at confidence level 0.05 against N (total sample) is  $\pm 1.96$  (cut off value). The calculation results revealed that the value of t is skewed on the positive side (right) of the curve and is smaller than the cut off value, so  $H_5$  is rejected. It is evident from the correlation coefficient value between goal reinforcement and student

learning is 0.030, which is very weak correlation. The hypothesis results also determine that there is not any significant influence of goals reinforcement on students learning.

**H<sub>6</sub>:**

*H<sub>6</sub>: Relationship management has positive influence on students learning.*

Using the above equation (Eq.2), H<sub>6</sub> is tested.

$$t = \frac{0.100}{\sqrt{\frac{1 - 0.100^2}{383 - 2}}}$$

$$t = \frac{0.100}{\sqrt{\frac{0.99}{381}}}$$

$$t = \frac{0.100}{0.050}$$

$$t = 2$$

From the above calculation, the value of t statistic is 2, which is higher than the cut off value (df). The degree of freedom for analysis at confidence level 0.05 against N (total sample) is  $\pm 1.96$ . The result determines that the value of t is skewed on the positive side of the curve, so H<sub>6</sub> is accepted. It is evident from the correlation coefficient is positive, but the relationship is weak between relationship management and student learning as a correlation coefficient is 0.100. Although the hypothesis H<sub>6</sub> is accepted, the researcher has to be careful while discussing results.

**H<sub>7</sub>:**

*H<sub>7</sub>: Effective teams has positive influence on students learning.*

Using the above equation (Eq.2),  $H_7$  is tested.

$$t = \frac{0.568}{\sqrt{\frac{1 - 0.568^2}{383 - 2}}}$$

$$t = \frac{0.568}{\sqrt{\frac{0.677}{381}}}$$

$$t = \frac{0.568}{0.042}$$

$$t = 13.5$$

From the above calculation, the value of t statistic is 13.5. This value is greater than the cut off value (df). The degree of freedom for analysis at confidence level 0.05 against N (total sample) is  $\pm 1.96$ . The calculation results show that the value of t is skewed on the positive side of the curve and is greater than the cut off value, so  $H_7$  is accepted. It is evident from the results that there is a significant correlation between effective teams and student learning, as the correlation coefficient is 0.568 with significant value of 0.000. Effective teams influence student learning in a positive way.

## 5.5 Conclusion of Chapter

The fifth chapter looked at the collected data and discussed a detailed analysis of the results obtained from the collected data. The data were tested for normalization using data normality tests. Following this, correlation analysis was carried followed by correlation result on the seven research hypotheses, which will in turn facilitate answering the research questions of this study in the next chapter, i.e., discussion and conclusion.

## **CHAPTER 6**

### **DISCUSSION AND CONCLUSION**

#### **6.1 Chapter Overview**

The last chapter of the study discusses the acceptance and rejection of the seven hypotheses in the light of correlation results derived in the previous chapter. Based on the determination of acceptance/rejection of hypotheses, the chapter endeavours to answer the research questions of the current study. The answers to the research questions allow making several implications (theoretical, methodological, and practical), and recommendations for future research. This discussion is followed by the limitations of the study. Finally, the chapter closes by giving an overview of the entire thesis.

This chapter will discuss the outcomes and trends of data analyzed in the previous chapter. The focus will be on discussing if the obtained data trends support or nullify the proposed hypotheses. Implications and recommendations will also be made in regard to the impact of social media as an integral communication tool for building effective teams. Following this discussion, the study will be a significant contribution both towards the practical as well as theoretical approaches. The chapter will conclude by discussing some limitations of the study.

The study intended to investigate if social media as an integral communication tool has an impact on the building of effective teams. Social media being, a popular and rather newer, tool of communication has become a significant part of people's life. Its use has spread so much so that it has now transcended the boundaries of its use as a mere fun tool of social communication, to its use as a professional tool. The field of academics is not ignorant of its use either. As discussed earlier, teachers and students now use social media

to connect with each other. This study has made a significant contribution by investigating if social media can be used as a communication tool that can help students to achieve their group tasks by building effective teams. In doing so, the study worked on the following objectives.

4. To examine the impact of social media as an integral communication tool in building effective teams in support of improved student learning engagement and learning outcomes.
5. To examine the impact of social media as an integral communication tool for relationship management in building effective teams in support of improved student learning engagement and learning outcomes.
6. To examine the impact of social media as an integral communication tool on goals reinforcement in building effective teams in support of improved student learning engagement and learning outcomes.

Seven hypotheses and six variables are derived from the above three study objectives. Results and findings based on these variables and hypotheses are discussed in Chapter 5. This chapter will discuss if the findings and results of the derived hypotheses can help achieve the study objectives by discussing each hypothesis separately.

## **6.2 Discussion on Hypothesis 1**

The first hypothesis studies correlation between social media and communication tool. The correlation analysis reveals that correlation between the two variables is considerably moderate and acceptable as  $p=0.001$ , yielding the value of  $r=0.378$ . Using the hypothesis testing formula, the calculated t-statistic comes to be  $t=8.04$ . As per t value calculated for the relationship between social media and communication tool for this study,  $H_1$  is accepted. This means that, in the case of this study, there is a relation between social media and communication tool in a sense that social media is used as an integral communication tool as evident from participants' response rate.

Previous studies also support the idea that social media is widely used as a tool of communication for various purposes (Osterrieder, 2013; Ross, 2014; Tanaskovic, 2014). A positive correlation between the two variables and acceptance of hypothesis is from participant students' widespread use of social media applications, their use of a number of different social media applications, widespread awareness of social media use, as well as owing to a growing impact of social media on students' lives. The questionnaire recorded greater positive responses in relation to the use and awareness of social media from the research participants. Therefore, the correlation coefficient resulted in positive, and the t-statistic value also leads to acceptance of  $H_1$ .

Since the first hypothesis is accepted given the t-statistic,  $H_1$  supports the first objective of the study that social media as an integral communication tool does have an impact on students' learning.

### **6.3 Discussion on Hypothesis 2**

The second hypothesis investigates the correlation between the two variables, i.e. social media, and goal reinforcement. The correlation analysis of these two variables concludes  $p=0.094$  and  $r=0.094$ , whereas t-statistic is calculated as  $t=1.84$ . As the p and r value reveals a very weak correlation between the two variables. The t-statistic of the two variables particular to this study rejects  $H_2$  since the value is smaller than the cut-off point. Therefore, it may be concluded in the case of this study there does not exist an acceptable correlation between social media and goal reinforcement.

The researcher concludes two significant probable reasons for the rejection of  $H_2$ . The first reason is evident from the literature consulted to locate previous studies conducted on the use of social media in team works, or otherwise, as a communication tool that ensures goals reinforcement in order to make team goals more achievable. To the best of researcher's knowledge, and according to literature consulted thus far, there are only a few pieces of evidence found that mention goal reinforcement only in general terms (Torgan & Cousineau, 2012; Huber et al., 2008; Cramer, 2009; Veeriah et al., 2018).

Colas et al. (2018) particularly believe that goal reinforcement has a positive impact on goal achievement since it helps focus on the goal when handling different tasks simultaneously. However, no evidence in the literature has been found by the researcher that discusses social media as a communication tool used for goal reinforcement. Secondly, as literature does not exhibit much work done on goal reinforcement as a means of goal achievement, student participants do not seem to be aware of this idea or its contribution towards goal achievement. This is evident from their responses and is reflected in the data.

Following this discussion and the calculated statistics, the researcher concludes that  $H_2$  is rejected. This implies that  $H_2$  does not support the third objective that studies social media as an integral communication tool for goals reinforcement for goal achievement and student learning.

#### **6.4 Discussion on Hypothesis 3**

Hypothesis three investigates the correlation between the two variables: social media and relationship management. With  $p=0.000$  and correlation coefficient  $r=0.491$ , which indicates a good and acceptable correlation, and  $t=11.15$ , that is positively skewed on the bell curve;  $H_3$  is accepted.

The obtained results regarding the correlation between social media and relationship management in the case of this study reveal an acceptance which is not a novel result. Other studies in the field are also indicative of either a correlation between the two variables, or they have discussed features that may have contributed towards the obtained results of the current study. For instance, Henttonen et al. (2014) hold the view that social media is a communication tool that can assist in managing relations among team members. On the other hand, some researchers identify features of social media that make it an integral communication tool for relationship management, such as quick and wide sharing of information, adjusting and adapting with the team (Molm, 1994; Henttonen et al., 2014; Neil, 2015; DiCamilo, 2015) thereby creating a correlation between social

media and relationship management in this study. Similar responses were also recorded from student participants who were of the view that social media helps them build a relationship in team-oriented study tasks by allowing them to interact quickly at the same time and is also a source of minimizing differences such as cultural differences.

In conclusion, based on the obtained results of correlation analysis and t-statistic,  $H_3$  is accepted. This suggests that  $H_3$  supports the second objective of this research study.

## **6.5 Discussion on Hypothesis 4**

The fourth hypothesis studies correlation between social media and effective teams. As per correlation analysis of the two variables, the calculated value of  $p=0.000$  and that of  $r=0.332$  is a good and acceptable correlation. The t-statistic also falls on the positive side of the curve with a value of  $t=6.91$ , thereby accepting  $H_4$ .

The research literature on the field reveals various reasons and features that make social media a communication tool that helps create effective teams if used to manage team-based tasks. Molm (1994) identifies that social media can help achieve better relations. Henttonen et al. (2014) are of the view that social media helps team members to be on the same level of work progress and be informed of it at the same time. Others hold that social media allows feedback, reviews, and engagement (Silbury et al., 2014) cited by (Filo et al., 2015; Cilliers et al., 2017). These factors are crucial towards creating effective teams, and social media as a tool of communication allows an achievement of these factors. These factors probably have contributed towards creating a positive correlation between social media and effective teams. Also, these factors may have affected student participants' response who widely agreed that social media allows them to interact as a team, helps manage group tasks, improves the quality of team-based tasks, and creates a better bonding between the team members.

These factors and responses are indicative that social media as a tool of communication helps create effective teams. Therefore, following the above discussion as well as obtained values,  $H_4$  is accepted and supports all the three research objectives of this study.

## **6.6 Discussion on Hypothesis 5**

The fifth hypothesis of this study aims at investigating a correlation between goal reinforcement and student learning. According to the calculated statistics, that investigated the correlation between the two variables in this study, the value of  $p=0.062$ ,  $r= 0.030$ . Hypothesis testing yielded the value of  $t = 0.58$ . The  $p$  and  $r$  value suggest that there is a very weak correlation, or nearly no correlation, between goal reinforcement and student learning. The  $t$ -statistic of the two variables falls on the positive side of the curve and is closer to zero, which leads to the rejection of  $H_5$ .

The rejection of  $H_5$  might have similar reasons as that of rejection of  $H_2$ . As the second hypothesis is also studying goal reinforcement in relation to social media,  $H_5$  also investigates goal reinforcement in relation to student learning. The core identified possible reason for rejection of the second hypothesis is the lack of awareness and research about goal reinforcement. Although, Colas et al. (2018) discuss this idea in terms of reminding of goals within the team; yet goal reinforcement appears to be an area that is yet to be explored. Also, the response from student participants of this study about goal reinforcement has not yielded encouraging outcomes as participants seem to be unaware of the term goal reinforcement and its possible effects on student learning. These reasons might have contributed towards the obtained values and a rejection of  $H_5$ .

As correlation analysis exhibits a very weak or no correlation, and the  $t$ -statistic falls on the positive side of the curve,  $H_5$  is rejected. The rejection of  $H_5$  implies that this hypothesis does not support the third research objective of this study.

## **6.7 Discussion on Hypothesis 6**

Hypothesis six studies the correlation between relationship management and student learning. A correlation analysis conducted for the two variables in this study gives  $p=0.007$  and that of the correlation coefficient as  $r=0.100$ . Testing these values using  $t$ -

statistic reveal  $t=2$ . The obtained values of  $p$  and  $r$  indicate a very weak positive correlation between the two variables. Whereas the value of  $t$ -statistic suggests skewness on the positive side of the curve, which is indicative of acceptance of  $H_6$  in the case of this study. However, other than this study, Kot et al. (2017) are also of the view that a good relationship between team members bears positive results on student learning. Evans (2014) adds teachers to this nexus and is of the view that relationship management is significant not only among students but also with their teachers to produce better learning outcomes. Research participants of the current study are also of the view that relationship management helps them achieve their study tasks by mitigating individual differences and by providing them with a chance to enjoy a sense of equality in the teamwork.

Although the  $t$ -statistic leads to the acceptance of  $H_6$ , yet conscious care is required on the part of the researcher of this study while coming to conclusions since the results of correlation analysis cannot be ignored which indicate a weak correlation between relationship management and student learning. Nevertheless, the acceptance of  $H_6$  implies that it supports the second hypothesis of this study.

## **6.8 Discussion on Hypothesis 7**

The seventh hypothesis of this research study investigates a correlation between effective teams and student learning. The result of the correlation analysis carried out for these two variables gives a value of  $p=0.000$  and  $r=0.568$ . These values are indicative of a particularly good and acceptable correlation between the two variables as dealt with in this research study. After correlation analysis, hypothesis testing has given a value of  $t=13.5$ , which is a positively skewed value on the bell curve. Being on the positive side of the curve,  $t$ -statistic is suggestive of acceptance of  $H_7$ .

The obtained results, that show a very good degree of correlation and greater positive skewness, are not a surprise to the researcher since Neil (2015) has also suggested that as good teams have a sense of how to behave in a team-work environment, the learning is positively affected. Colas et al. (2018) argue that effective teams know their goals and

work towards reminding each other of these goals. As a result, such teams tend to have a greater degree of confidence in what they are doing, thereby affecting learning outcomes positively (Kot et al., 2017). In addition to these researchers' arguments, the research participants of the current study have also expressed a positive attitude towards effective teams influencing learning outcomes positively. The student participants are of the view that effective teams obtain a better quality of team-based tasks if the team members have good communication and bonding among them.

In light of the above discussion, in addition to obtained values and statistical results of effective teams and students learning, H<sub>7</sub> is accepted and supports all the three research objectives of this study.

## **6.9 Conclusion for Hypothesis Testing**

In the current study, out of seven hypotheses, five hypotheses are accepted since there was a considerable and acceptable correlation between variables. This correlation and acceptance are evident from correlation analysis and hypothesis testing results discussed above. Acceptance of a greater number of hypotheses suggests that social media as an integral communication tool does have an impact on the building of effective teams. The only noteworthy variable that resulted in the rejection of H<sub>2</sub> and H<sub>5</sub> is goal reinforcement. Since both H<sub>2</sub> and H<sub>5</sub> studied the correlation between goal reinforcement and one other variable, both the hypotheses are rejected, reasons for which have already been discussed. Other than this, all the other variables, within studied correlations, have a positive impact on the proposed concept of this study. In the light of hypotheses discussion, research questions of this study can be addressed.

### **6.9.1 Research Question 1**

From calculations and discussions above, the first question of this study can be addressed. The Q1 of this study aims at investigating the following:

*Q1. What is the impact of social media as an integral communication tool in building effective teams in support of improved student learning engagement and learning outcomes?*

Addressing this research question, social media as an integral communication tool has a positive impact on building effective teams and on student's learning. To elaborate, social media offers features that allow the building of effective teams, such as quick, cost-effective, and equal dissemination of information, managing individual differences, forming groups, creating better relations bonding. As a result, effective teams of students working on team-based tasks observe better learning outcomes and student learning. Therefore, social media as an integral communication tool positively impacts both building of effective teams and students' learning.

## **6.9.2 Research Question 2**

The second question of this study explores the following question:

*Q2. How is social media as an integral communication tool leaving an impact on relationship management in building effective teams in support of improved student learning engagement and learning outcomes?*

Answering the second research question, social media as an integral communication tool has a positive impact on relationship management that results in the building of effective teams. Social media achieves relationship management within teams by letting team members interact with each other in real-time, by allowing them to interact and work on a team-based task without a need to be physically present at one place together, by giving more flexibility of scheduling teamwork, by allowing team members to be informed equally, and by creating a sense of togetherness, unity and bonding within the team. Owing to these factors, social media as an integral communication tool helps with relationship management which is a core requirement to building effective teams. These effective teams in return, have a positive impact on students' learning as they work together on a team-based task.

### **6.9.3 Research Question 3**

The third and the last question of this study investigates the following:

*Q3. What are the ways in which social media, as an integral communication tool, is able to impact goal reinforcement in building effective teams in support of improved student learning engagement and learning outcomes?*

In light of participants' response, obtained statistical values, and hypotheses discussion, the researcher concludes that social media, as an integral communication tool, has no or a minimal impact on goal reinforcement. As both the hypotheses investigating the correlation between goals reinforcement and other variables of the study are rejected; therefore, social media as an integral communication tool does not impact goals reinforcement. Conclusively, goals reinforcement does not have a role if the building of effective teams and students' learning is achieved through the medium of social media.

## **6.10 Implications**

The researcher has concluded three types of implications for this study: (1) theoretical implications; (2) methodological implications; and (3) practical implications. These implications, as per the current study, are discussed as follows.

### **6.10.1 Theoretical Implications**

This study investigated social media as an integral communication tool for building effective teams and students' learning. The study used two theories, Social Exchange Theory (SET) and Communication Accommodation Theory (CAT), along with Digital Mediated Learning (DML) in order to achieve the research objectives to answer the research questions further. However, the research is based on social theories that can be used and applied in a variety of disciplines. The results and theoretical framework of the current study cannot be generalised since they are preliminary results. As the researcher gathered primary data from three universities from all over Malaysia, the results of the

study only rested upon the data collected from students of these three universities only. Therefore, the results of the study are preliminary and cannot be generalised.

Since the research results are preliminary, the research is more inclined towards convergent studies, which means that a focus will be towards investigating if the study results can be generalised for data similar to this study, if not on all types of data (Clements, 2000). To move this study results in the direction of convergent studies, observational reliability was ensured to the maximum level. The researcher strived to achieve observational reliability by conducting a quantitative study through a questionnaire, by using theories in forming the questions, and by using statistical tests for analysing and processing data. This observational reliability supports the moving of this study towards convergent studies and to use the preliminary results of this study for studies that are using data similar to this study. Therefore, the model of this study may be helpful in studying the effects of social media as an integral communication when dealing with teams for students' learning.

### **6.10.2 Practical Implications**

A number of practical implications can be argued for this research study. The research participants of this study, who are university students from different universities across Malaysia, have shown through their responses that social media as an integral communication tool has a significant influence on them as a student learner. As an integral communication tool, social media helps them, particularly in tasks that are team-based. Social media helps them create better teams through its features that are cost-effective, efficient, equally available, and accessible to all team members, allow better team bonding and mitigate individual differences and promote a sense of equality among the team members. As a result, students feel that strong and effective teams who have good relationship management leave a positive impact on their learning.

Following these implications derived from the results of the study as well as from participant responses, the findings of this study can be used practically to enhance team effectiveness as well as student learning. To elaborate, in educational institutions,

especially higher education institutions, where students are assigned team-based tasks to prepare them for the corporate world, social media can be introduced as a communication tool to help them manage the team and team relations. Especially, in a multicultural environment, where team members come from different cultural backgrounds, platforms like social media can help teams in building better relations, since research has proven that social media is effective in creating social relations and socialising. In this way, not only students can create effective teams for their team-based tasks and enhance their learning and goal achievement; businesses can also utilize this tool to obtain the same outcomes.

Furthermore, student participants revealed that social media has a significant influence on their lives and that they use a number of different social media applications; so, this wide use can be turned into productive and useful outcomes. Students can be taught an academic use of their favorite tool of communication, i.e. social media, in achieving their team-based tasks. Universities, or academic institutions, can integrate the use of social media in place of learning management system (LMS) for team-based tasks. This will excite students as a team since social media to them is a place of socializing, and they widely use it. As a result, they might be keener on working as a team since this team will be managed using a tool and an interface that they like to work using. It can also prove to be a helping hand for the teachers who can interact with their students and can create a better relationship.

Lastly, social media can also be a helpful communication tool in achieving better team relations. Not only academic institutions but any other organization may use social media as a tool for relationship management of their teams. Prior research, as well as the results of this study, have revealed, that social media as an integral communication tool has a positive impact on relationship management in teams. As social media features allow more and quicker interaction in real-time, as well as quick and uniform dissemination of information without a need for all members of the group to be physically present, creating a sense of trust, and bonding in the team becomes easier.

## **6.11 Limitations and Recommendations for Future Research**

The current study with the above implications may be helpful in different ways. However, there are some limitations of this study that the researcher observed as the study was conducted. The following discussion will foreground some limitations of this study. In light of these limitations and overall research results, recommendations for future research will be made.

### **6.11.1 Limitations**

The first limitation of this study is that although it collected data from universities in different parts of Malaysia instead of choosing only one region. However, the data was collected from students of only three universities across Malaysia. Therefore, if the study was conducted with other universities with their system of student interaction and team-based tasks, it might have produced different outcomes.

The second limitation of the study is regarding the study participants. The study participants were students of undergraduate level. However, a similar study could also be conducted on a wider scale by including other levels at university. But widening the population will require more time, effort, and funds to collect, process and analyse the data.

Another limitation of the study is that although the focus is on investigating social media as an integral tool of communication for building effective teams for students' learning, which is a study of social media for academic concerns. However, this study only investigates university students, whereas college, high school students are also included in academics and could be part of the study. Doing so may produce other results and implications, but it needs more time and funding.

Moreover, this study investigates relationship management and goal reinforcement as factors that can help build effective teams using social media as an integral

communication tool. However, there may be other factors that can help create effective means and that require other theories to hold them for conducting a research study.

Also, the use of five Likert scale has its own limitations. The five Likert scale used in this study gave five options to choose from in response to each question asked to the respondent, i.e., strongly agree, agree, neutral, disagree, strongly disagree. Although, this type of scale best suits the kind of study at hand; however, it must not be ignored that five Likert scale does not allow the respondent to respond subjectively. In other words, a respondent may have a response other than what the scale offers. Also, their comments cannot be added as five Likert scale is more objective.

Furthermore, to the best knowledge of the researcher, the theories used in the theoretical framework, i.e., Communication Accommodation Theory, Social Exchange Theory and Digitally Mediated Learning, combine to create a theoretical framework that may best answer the research questions. However, it may occur to other researcher(s) that using a different set of theories may help achieve the research objectives of the study in a different way or may answer other questions that have not been investigated in this study.

Another limitation that may affect the outcomes of this study is the choice of target population for data collection. For this study, the population was students at all Australian universities. There are university campuses of other countries in Malaysia. If the data was collected from international universities from countries other than Australia, the collected data and research outcomes might (or might not) be different.

Lastly, the study collected data from students with no consideration of other probable factors that may influence the results differently. Factors such as age, ethnicity, socio-cultural background, gender, etc. may provide a deeper insight into the questions raised by this research study.

### **6.11.2 Future Research Recommendations**

In light of the limitations and overall results and implication of this study, the researcher makes some suggestions for future research.

Based on research limitations, several ideas for future research can be proposed. Since the study is restricted to private universities in Malaysia, it may be a good idea to include government institutions in future studies to compare results. Also, future researchers may expand the research population and add other levels at university, or even other academic institutions such as high school or colleges in their research. It may also be a good idea to consider the age, ethnicity, gender, socio-cultural, socio-economic, and linguistic backgrounds of the research participants, especially if research includes multicultural participants. In terms of investigating factors that can help create effective teams using social media, future research may investigate possible factors other than goal reinforcement and relationship management.

Based on the overall result and implications of this study, the researcher believes that goal reinforcement, as a concept in general, as well as a factor of building of effective teams, has not been addressed in the literature. Future researchers may conduct studies and research that investigate goal reinforcement.

Finally, from the literature consulted for this research study, and to the best of researcher's knowledge, it appears that there is a good deal of literature on social media as a tool of communication and socializing in general. However, there is still much room for investigating social media in more specific ways, similar to investigations conducted in this research study. Future researchers may investigate the use of social media for purposes other than socializing and making friends.

## 6.12 Thesis Summary

Over the years, our approach and ways of communication have undergone a significant change. The most turning point of this change is due to the introduction of the internet and Web 2.0 technology that has allowed people to transcend the geographical boundaries and connect to anyone around the world. The widespread use of the internet is seeing the growing influence of social media, as it has now become a significant part of people's life. Today, people spend a considerable amount of their time on social media as they use a number of different social media sites. The applications that become part of our lives need to be used in constructive ways. The constructive uses of social media are not unknown. People are using social media for personal communication, advertising, business, managing relations, in medicine, in academics and for many other useful purposes. Keeping in view this popularity and widespread use of social media, this research study aimed at conducting deeper research on the use of social media as an integral communication tool for building effective teams and students' learning. The study proposed to investigate three research questions that seek to answer if social media as an integral communication tool a positive impact on relationship management and goal reinforcement has, which in return have a positive impact on building effective teams. These questions led to three research objectives that were based on these questions.

In order to investigate the research questions, relevant literature was consulted, and two theories were lined up to answer the questions and to form the data collection questionnaire. The theories used by the researcher were Communication Accommodation Theory (CAT), and Social Exchange Theory (SET), with the integration of Digitally Mediated Learning (DML). By using these theories as a supporting and grounding framework, the questionnaire was composed for data collection from undergraduate level students of three private universities across Malaysia. The collected data were tested for normality and reliability.

Once the data was tested, it was processed and based on the results and findings of the data, and hypotheses were studied for correlation. Following the results of correlation,

statistical tests were conducted to find acceptance and rejection of hypotheses. Five hypotheses were accepted, whereas two were rejected. The results of correlation analysis and statistical test yielded answers to the research questions and implications of the study. The researcher concluded three types of implications: (1) theoretical implications; (2) methodological implications; and (3) practical implications. The main implications were that the model used in the study is a novel combination of the theories it has used, the study has a convergent focus, and that social media can be used to achieve effective building and student learning goals along with other benefits.

Along with the listed implications, the research also had some limitations, including restricted population, restricted participant profile, time and funds, and a limited number of universities studied. Based on these limitations and overall research, the researcher recommended some suggestions for future researchers. They may expand their population, consider participant profile in detail, and work on goal reinforcement and practical uses of social media further.

## References

- Abdillah, L. A. (2017). Exploring Students Blended Learning Through Social Media. *arXiv preprint arXiv:1701.07193*.
- Agarwal, R., & Day, A. E. (1998). The impact of the Internet on economic education. *The Journal of Economic Education*, 29(2), 99-110.
- Ahmad, S., Zulfikar, T., & Hardiana, F. (2020). The use of Social Media Whatsapp Among English education students for solving thesis writing problems. *Humanities & Social Sciences Reviews*, 8(3), 447-455.
- Aikman, S., Robinson-Pant, A., McGrath, S., Jere, C. M., Cheffy, I., Themelis, S., & Rogers, A. (2016). Challenging deficit discourses in international education and development. *Compare: A Journal of Comparative and International Education*, 46(2), 314-334.
- Al-Bahrani, A., & Patel, D. (2015). Incorporating twitter, instagram, and facebook in economics classrooms. *The Journal of Economic Education*, 46(1), 56-67.
- Al-Bahrani, A., Patel, D., & Sheridan, B. (2015). Engaging students using social media: The students' perspective. *International Review of Economics Education*, 19, 36-50.
- Al-Rahmi, W., Othman, M. S., & Yusuf, L. M. (2015). The role of social media for collaborative learning to improve academic performance of students and researchers in Malaysian higher education. *The International Review of Research in Open and Distributed Learning*, 16(4).
- Al-Rahmi, W. M., Alias, N., Othman, M. S., Marin, V. I., & Tur, G. (2018). A model of factors affecting learning performance through the use of social media in Malaysian higher education. *Computers & Education*, 121, 59-72.
- Al-Shdayfat, N. M. (2018). Undergraduate student nurses' attitudes towards using social media websites: A study from Jordan. *Nurse education today*, 66, 39-43.
- Almadhoun, N. M., Dominic, P. D. D., & Woon, L. F. (2011). *Social media as a promotional tool in higher education in Malaysia*. Paper presented at the National Postgraduate Conference (NPC), 2011.
- Alshuaibi, M. S. I., Alshuaibi, A. S. I., Shamsudin, F. M., & Arshad, D. A. (2018). Use of social media, student engagement, and academic performance of business

- students in Malaysia. *International Journal of Educational Management*, 32(4), 625-640.
- Alsuraihi, A. K., Almaqati, A. S., Abughanim, S. A., & Jastaniah, N. A. (2016). Use of social media in education among medical students in Saudi Arabia. *Korean journal of medical education*, 28(4), 343.
- Ansari, J. A. N., & Khan, N. A. (2020). Exploring the role of social media in collaborative learning the new domain of learning. *Smart Learning Environments*, 7(1), 1-16.
- Arshad, M., Ahmad, S., & Siddiqui, F. A. (2018). SOCIAL MEDIA TECHNOLOGIES AND THEIR BENEFITS IN HIGHER EDUCATION INSTITUTIONS: A SURVEY OF JAZAN UNIVERSITY. *Information Technologies and Learning Tools*, 65(3), 91-102.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of college student personnel*, 25(4), 297-308.
- Balakrishnan, V., Teoh, K. K., Pourshafie, T., & Liew, T. K. (2017). Social media and their use in learning: A comparative analysis between Australia and Malaysia from the learners' perspectives. *Australasian Journal of Educational Technology*, 33(1).
- Bandura, A. (1978). Social learning theory of aggression. *Journal of communication*, 28(3), 12-29.
- Barcelona., U. D. (2018). Universitat De Barcelona. . Retrieved from [http://www.ub.edu/web/ub/en/estudis/oferta\\_formativa/masters\\_propis/fitxa/D/201611838/index.html](http://www.ub.edu/web/ub/en/estudis/oferta_formativa/masters_propis/fitxa/D/201611838/index.html)
- Bell, F. (2009). Connectivism: a network theory for teaching and learning in a connected world. *Educational Developments, The Magazine of the Staff and Educational Development Association*, 10(3).
- Beltran-Cruz, M., & Cruz, S. B. B. (2013). The Use of Internet-Based Social Media as a Tool in Enhancing Student's Learning Experiences in Biological Sciences. *Higher Learning Research Communications*, 3(4), 68-80.
- Bonett, D. G., & Wright, T. A. (2015). Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of Organizational Behavior*, 36(1), 3-15.
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of computer-mediated Communication*, 13(1), 210-230.

- Brodaty, H., Mothakunnel, A., de Vel-Palumbo, M., Ames, D., Ellis, K. A., Reppermund, S., . . . Crawford, J. (2014). Influence of population versus convenience sampling on sample characteristics in studies of cognitive aging. *Annals of epidemiology*, 24(1), 63-71.
- Bruce, B. C. (2009). Ubiquitous learning, ubiquitous computing, and lived experience. In: University of Illinois Press.
- Campbell, D. T. (1955). The informant in quantitative research. *American Journal of sociology*, 60(4), 339-342.
- Cardon, P. W., & Marshall, B. (2015). The hype and reality of social media use for work collaboration and team communication. *International Journal of Business Communication*, 52(3), 273-293.
- Casey, G. (2013). Interdisciplinary literacy through social media in the mathematics classroom: An action research study. *Journal of Adolescent & Adult Literacy*, 57(1), 60-71.
- Cetinkaya, A., Sahin, O. E., & Kirk, A. M. (2014). A research on social and political use of social media in Turkey. *International Journal of Science Culture and Sport (IntJSCS)*, 2(4), 49-60.
- Chawinga, W. D. (2017). Taking social media to a university classroom: teaching and learning using Twitter and blogs. *International Journal of Educational Technology in Higher Education*, 14(1), 3.
- Chesick, C. W. (2015). *The impact of a well-developed social media communication strategy on K12 schools in a social media age*. Southwest Baptist University,
- Christian, F. (2014). Social Media. A Critical Introduction. In: London: SAGE Publications.
- Cilliers, L., Chinyamurindi, W. T., & Viljoen, K. (2017). Factors influencing the intention to use social media for work-related purposes at a South African higher education institution. *SA Journal of Human Resource Management*, 15(1), 1-8.
- Cohen, A., & Duchan, G. (2012). The usage characteristics of Twitter in the learning process. *Interdisciplinary Journal of E-Learning and Learning Objects*, 8(1), 149-163.

- Colas, C., Sigaud, O., & Oudeyer, P.-Y. (2018). CURIIOUS: Intrinsically Motivated Multi-Task, Multi-Goal Reinforcement Learning. *arXiv preprint arXiv:1810.06284*.
- Collins, K., Shiffman, D., & Rock, J. (2016). How are scientists using social media in the workplace? *PLoS One, 11*(10), e0162680.
- Connelly, L. M. (2008). Pilot studies. *Medsurg Nursing, 17*(6), 411.
- Cramer, B. (2009). Using social media to advance your goals. *Nonprofit World, 27*(1), 20-21.
- De Vaus, D. A., & de Vaus, D. (2001). *Research design in social research*: Sage.
- Denscombe, M. (2008). Communities of practice: A research paradigm for the mixed methods approach. *Journal of mixed methods research, 2*(3), 270-283.
- Dikko, M. (2016). Establishing Construct Validity and Reliability: Pilot Testing of a Qualitative Interview for Research in Takaful (Islamic Insurance). *Qualitative Report, 21*(3).
- Donaldson, L. (1997). A positivist alternative to the structure-action approach. *Organization Studies, 18*(1), 77-92.
- Drahošová, M., & Balco, P. (2017). The analysis of advantages and disadvantages of use of social media in European Union. *Procedia Computer Science, 109*, 1005-1009.
- Eagleman, A. N. (2013). Acceptance, motivations, and usage of social media as a marketing communications tool amongst employees of sport national governing bodies. *Sport management review, 16*(4), 488-497.
- Easyuni. (2020). Study in Malaysia for International Students.
- Ebner, M., Lienhardt, C., Rohs, M., & Meyer, I. (2010). Microblogs in Higher Education—A chance to facilitate informal and process-oriented learning? *Computers & Education, 55*(1), 92-100.
- Edufair. (2018). Education Fair. Retrieved from <https://edufair.fsi.com.my/exhibitors?locale=en>
- Emerson, R. M. (1976). Social exchange theory. *Annual review of sociology, 2*(1), 335-362.

- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
- Evans, B. C., Coon, D. W., & Ume, E. (2011). Use of theoretical frameworks as a pragmatic guide for mixed methods studies: A methodological necessity? *Journal of mixed methods research*, 5(4), 276-292.
- Evans, C. (2014). Twitter for teaching: Can social media be used to enhance the process of learning? *British Journal of Educational Technology*, 45(5), 902-915.
- Fain, J. A. (2017). *Reading, understanding, and applying nursing research*: FA Davis.
- Filo, K., Lock, D., & Karg, A. (2015). Sport and social media research: A review. *Sport management review*, 18(2), 166-181.
- Finn, G. M., Brown, M. E., Laughey, W., & Dueñas, A. (2020). # pandemicpedagogy: Using Twitter for knowledge exchange. *Medical education*, 54(12), 1190-1191.
- Firat, M., Altinpulluk, H., Kiliç, H., & Büyük, K. (2017). Determining Open Education Related Social Media Usage Trends in Turkey Using a Holistic Social Network Analysis. *Educational Sciences: Theory and Practice*, 17(4), 1361-1382.
- Fox, B. I., & Varadarajan, R. (2011). Use of Twitter to encourage interaction in a multi-campus pharmacy management course. *American journal of pharmaceutical education*, 75(5), 88.
- Freemalaysiatoday. (2019). Can Malaysia achieve 250,000 foreign students by 2025? Retrieved from <https://www.freemalaysiatoday.com/category/leisure/2019/12/10/can-malaysia-achieve-250000-foreign-students-by-2025>
- Fung, I. C.-H., Tse, Z. T. H., & Fu, K.-W. (2015). The use of social media in public health surveillance. *Western Pacific surveillance and response journal: WPSAR*, 6(2), 3.
- Gal-Tzur, A., Grant-Muller, S. M., Kuflik, T., Minkov, E., Nocera, S., & Shoor, I. (2014). The potential of social media in delivering transport policy goals. *Transport Policy*, 32, 115-123.
- Gallois, C. O., & Ogay, T. (2005). T., & Giles, H.(2005). Communication accommodation theory: A look back and a look ahead. W. Gudykunst (red.): *Theorizing about intercultural communication*. Thousand Oaks, CA: Sage, 121-148.

- Garcia Henche, B. (2018). Urban experiential tourism marketing: Use of social media as communication tools by the food markets of Madrid. *Journal of Tourism Analysis: Revista de Análisis Turístico*.
- Gray, D. E. (2013). *Doing research in the real world*: Sage.
- Green, H. E. (2017). Use of theoretical and conceptual frameworks in qualitative research. *Nurse researcher*, 21(6), 34-38.
- Greenhow, C., & Lewin, C. (2016). Social media and education: reconceptualizing the boundaries of formal and informal learning. *Learning, media and technology*, 41(1), 6-30.
- Gruzd, A., Haythornthwaite, C., Paulin, D., Gilbert, S., & del Valle, M. E. (2018). Uses and gratifications factors for social media use in teaching: Instructors' perspectives. *New Media & Society*, 20(2), 475-494.
- Hafiz Zakaria, M., Watson, J., & Edwards, S. L. (2010). Investigating the use of Web 2.0 technology by Malaysian students. *Multicultural Education & Technology Journal*, 4(1), 17-29.
- Hammou, I., Aboudou, S., & Makloul, Y. (2020). Social Media and Intangible Cultural Heritage for Digital Marketing Communication: Case of Marrakech Crafts.
- Harris, J. K., Moreland-Russell, S., Tabak, R. G., Ruhr, L. R., & Maier, R. C. (2014). Communication about childhood obesity on Twitter. *American journal of public health*, 104(7), e62-e69.
- Hausmann, A., Toivonen, T., Slotow, R., Tenkanen, H., Moilanen, A., Heikinheimo, V., & Di Minin, E. (2018). Social Media Data Can Be Used to Understand Tourists' Preferences for Nature-Based Experiences in Protected Areas. *Conservation Letters*, 11(1), e12343.
- Hausmann, J. S., Touloumtzis, C., White, M. T., Colbert, J. A., & Gooding, H. C. (2017). Adolescent and young adult use of social media for health and its implications. *Journal of adolescent health*, 60(6), 714-719.
- Haythornthwaite, C., Andrews, R., Kazmer, M. M., Bruce, B. C., Montague, R.-A., & Preston, C. (2007). Theories and models of and for online learning. *First Monday*, 12(8).

- Henttonen, K., Johanson, J.-E., & Janhonen, M. (2014). Work-team bonding and bridging social networks, team identity and performance effectiveness. *Personnel Review*, 43(3), 330-349.
- Hinchcliffe, D., & Kim, P. (2012). *Social business by design: Transformative social media strategies for the connected company*: John Wiley & Sons.
- Htay, M. N. N., McMonnies, K., Kalua, T., Ferley, D., & Hassanein, M. (2020). Postgraduate students' perspective on using Twitter as a learning resource in higher education. *Journal of Education and Health Promotion*, 9.
- Huber, J., Goldsmith, K., & Mogilner, C. (2008). Reinforcement versus balance response in sequential choice. *Marketing letters*, 19(3-4), 229.
- Israel, G. D. (1992). Determining sample size.
- Jha, A., Lin, L., & Savoia, E. (2016). The use of social media by state health departments in the US: analyzing health communication through Facebook. *Journal of community health*, 41(1), 174-179.
- Joo, T.-M., & Teng, C.-E. (2017). Impacts of social media (facebook) on human communication and relationships: A view on behavioral change and social unity. *International Journal of Knowledge Content Development & Technology*, 7(4), 27-50.
- Junco, R., Heiberger, G., & Loken, E. (2011). The effect of Twitter on college student engagement and grades. *Journal of computer assisted learning*, 27(2), 119-132.
- Kapahi, A., Ling, C. S., Ramadass, S., & Abdullah, N. (2013). Internet addiction in Malaysia causes and effects.
- Kiddie, T. J. (2014). Text (ing) in context: The future of workplace communication in the United States. *Business and Professional Communication Quarterly*, 77(1), 65-88.
- Kim, H.-Y. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restorative dentistry & endodontics*, 38(1), 52-54.
- Kivunja, C. (2015). Innovative methodologies for 21st century learning, teaching and assessment: A convenience sampling investigation into the use of social media technologies in higher education. *International Journal of Higher Education*, 4(2), 1.

- Kline, T. J. (2005). *Psychological testing: A practical approach to design and evaluation*: Sage Publications.
- Kordmahaleh, F. H., Rouhipour, A., Mirbaha, S., & Baratloo, A. (2018). Social media; resolving tunnel vision in practicing medicine. *Electronic physician, 10*(1), 6179.
- Kot, S., Tan, M., & Dragolea, L. (2017). The Use of Social Media Supporting Studying. *Economics & Sociology, 10*(1), 169.
- Krutka, D. G., & Carpenter, J. P. (2016). Participatory learning through social media: How and why social studies educators use Twitter. *Contemporary Issues in Technology and Teacher Education, 16*(1), 38-59.
- Kudeshia, C., & Mittal, A. (2015). Social Media: An Eccentric Business Communication Tool for the 21st Century Marketers. *International Journal of Online Marketing (IJOM), 5*(2), 37-57.
- Kuh, G. D. (2009). The national survey of student engagement: Conceptual and empirical foundations. *New directions for institutional research, 2009*(141), 5-20.
- Kunka, B. A. (2020). Twitter in higher education: increasing student engagement. *Educational Media International, 1*-16.
- LeNoue, M., Hall, T., & Eighmy, M. A. (2011). Adult education and the social media revolution. *Adult learning, 22*(2), 4-12.
- Levy, M. (2013). Stairways to heaven: implementing social media in organizations. *Journal of Knowledge Management, 17*(5), 741-754.
- Malik, A., Heyman-Schrum, C., & Johri, A. (2019). Use of Twitter across educational settings: a review of the literature. *International Journal of Educational Technology in Higher Education, 16*(1), 1-22.
- Mann, C. (2003). Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emergency medicine journal, 20*(1), 54-60.
- Mas'udah, D. (2017). The Use of Social Media in Intercultural Friendship Development. *Profetik, 10*(1), 5-20.
- Molm, L. D. (1994). Dependence and risk: Transforming the structure of social exchange. *Social Psychology Quarterly, 163*-176.

- Moran, M., Seaman, J., & Tinti-Kane, H. (2011). Teaching, Learning, and Sharing: How Today's Higher Education Faculty Use Social Media. *Babson Survey Research Group*.
- Mount, M., & Martinez, M. G. (2014). Social media: A tool for open innovation. *California Management Review*, 56(4), 124-143.
- Muijs, D. (2010). *Doing quantitative research in education with SPSS*: Sage.
- Nadeak, B. (2020). The effectiveness of distance learning using social media during the pandemic period of COVID-19: A case in Universitas Kristen Indonesia. *International Journal of Advanced Science and Technology*, 29(7), 1764-1772.
- Nardi, P. M. (2018). *Doing survey research: A guide to quantitative methods*: Routledge.
- Nchabeleng, M., Botha, C., & Bisschoff, C. (2018). The uses, benefits and limitations of social media for public relations in South African non-governmental organisations. *Journal of Business and Retail Management Research*, 12(3).
- Neier, S., & Zayer, L. T. (2015). Students' perceptions and experiences of social media in higher education. *Journal of Marketing Education*, 37(3), 133-143.
- Neill, M. S. (2015). Emerging issues in internal communications: Generational shifts, internal social media & engagement. *Public Relations Journal*, 9(4), 1-20.
- Niedermeier, K. E., Wang, E., & Zhang, X. (2016). The use of social media among business-to-business sales professionals in China: how social media helps create and solidify guanxi relationships between sales professionals and customers. *Journal of Research in Interactive Marketing*, 10(1), 33-49.
- Osterrieder, A. (2013). The value and use of social media as communication tool in the plant sciences. *Plant methods*, 9(1), 26.
- Parahoo, K. (2014). *Nursing research: principles, process and issues*: Macmillan International Higher Education.
- Peterson, L., Homer, A. L., & Wonderlich, S. A. (1982). The integrity of independent variables in behavior analysis. *Journal of applied behavior analysis*, 15(4), 477-492.
- Piotrowski, C. (2015). Emerging research on social media use in education: A study of dissertations. *Research in Higher Education Journal*, 27.

- Pomerantz, J., Hank, C., & Sugimoto, C. R. (2015). The state of social media policies in higher education. *PLoS One*, *10*(5), e0127485.
- Pronina, E. E. (2018). The new media and the evolution of the human psyche. *Psychology in Russia. State of the Art*, *11*(2).
- Ranginwala, S., & Towbin, A. J. (2018). Use of social media in radiology education. *Journal of the American College of Radiology*, *15*(1), 190-200.
- Rasiah, R. R. V. (2014). Transformative higher education teaching and learning: Using social media in a team-based learning environment. *Procedia-Social and Behavioral Sciences*, *123*, 369-379.
- Rocco, T. S., & Plakhotnik, M. S. (2009). Literature reviews, conceptual frameworks, and theoretical frameworks: Terms, functions, and distinctions. *Human Resource Development Review*, *8*(1), 120-130.
- Roque, V., & Raposo, R. (2016). Social media as a communication and marketing tool in tourism: an analysis of online activities from international key player DMO. *Anatolia*, *27*(1), 58-70.
- Ross, B. E. (2014). *A case study of citizens' experience with social media as a communication tool with 311 for citizen interaction, service demands, and quality of life*. Capella University,
- Saffer, A. J., Sommerfeldt, E. J., & Taylor, M. (2013). The effects of organizational Twitter interactivity on organization–public relationships. *Public relations review*, *39*(3), 213-215.
- Saleem, M., Aly, A., & Genoni, P. (2015). Use of social media by academic librarians in Iraq. *New Library World*, *116*(11/12), 781-795.
- See Yin Lim, J., Agostinho, S., Harper, B., & Chicharo, J. (2014). The engagement of social media technologies by undergraduate informatics students for academic purpose in Malaysia. *Journal of Information, Communication and Ethics in Society*, *12*(3), 177-194.
- Sekaran, U. (2003). *Research Methods for Business: A skill-bulding approach*. New York: John Willey and Son. *Inc Year*.
- Shemberger, M., & Wright, L. (2014). # TestReview: Exploring the Use of Social Media as a Digital Study Guide. *Journal of Interdisciplinary Studies in Education*, *3*(1), 60-74.

- Shen, B., & Bissell, K. (2013). Social media, social me: A content analysis of beauty companies' use of Facebook in marketing and branding. *Journal of Promotion Management, 19*(5), 629-651.
- Shorey, R. C., Cornelius, T. L., & Bell, K. M. (2008). A critical review of theoretical frameworks for dating violence: Comparing the dating and marital fields. *Aggression and violent behavior, 13*(3), 185-194.
- Skog, D. (2005). Social interaction in virtual communities: The significance of technology. *International Journal of Web Based Communities, 1*(4), 464-474.
- Snider, C., Škec, S., Gopsill, J., & Hicks, B. (2017). The characterisation of engineering activity through email communication and content dynamics, for support of engineering project management. *Design Science, 3*.
- Soliz, J., & Giles, H. (2014). Relational and Identity Processes in Communication: A Contextual and Meta-Analytical Review of Communication Accommodation Theory. *Annals of the International Communication Association, 38*(1), 107-144.
- Sun, X., Li, C., Jin, L., Fan, Y., & Wang, D. (2011). Development and validation of Chinese version of Female Sexual Function Index in a Chinese population—A pilot study. *The journal of sexual medicine, 8*(4), 1101-1111.
- Szyjka, S. (2012). UNDERSTANDING RESEARCH PARADIGMS: TRENDS IN SCIENCE EDUCATION RESEARCH. *Problems of Education in the 21st Century, 43*.
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education, 48*(6), 1273-1296.
- Tanaskovic, N. (2014). *Like, comment, share and all that jazz: social media as communication and marketing tool case: Social media marketing approaches used by MaiJazz music festival*. University of Stavanger, Norway,
- Tapscott, D., & Williams, A. D. (2010). Innovating the 21st-century university: It's time. *Educause review, 45*(1), 16-29.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education, 2*, 53.

- Teixeira, L., Trindade, D., Loaiza, M., de Carvalho, F. G., Raposo, A., & Santos, I. (2012). *A vr framework for desktop applications*. Paper presented at the Virtual and Augmented Reality (SVR), 2012 14th Symposium on.
- Thomas, L., Briggs, P., Hart, A., & Kerrigan, F. (2017). Understanding social media and identity work in young people transitioning to university. *Computers in Human Behavior, 76*, 541-553.
- Torgan, C. E., & Cousineau, T. M. (2012). Leveraging Social Media Technologies To Help Clients Achieve Behavior Change Goals. *ACSM's Health & Fitness Journal, 16*(6), 18-24.
- Tozer, B. C. (2017). Pennsylvania Teachers' Perceptions and Use of Social Media Communication Technologies as a Pedagogical Tool.
- Tur, G., & Marn, V. (2015). Enhancing learning with the social media: student teachers' perceptions on Twitter in a debate activity. *Journal of New Approaches in Educational Research (NAER Journal), 4*(1), 46-53.
- Uhls, Y. T., Ellison, N. B., & Subrahmanyam, K. (2017). Benefits and costs of social media in adolescence. *Pediatrics, 140*(Supplement 2), S67-S70.
- Van Den Beemt, A., Thurlings, M., & Willems, M. (2020). Towards an understanding of social media use in the classroom: a literature review. *Technology, Pedagogy and Education, 29*(1), 35-55.
- van Zoonen, W., Verhoeven, J. W., & Vliegenthart, R. (2017). Understanding the consequences of public social media use for work. *European Management Journal, 35*(5), 595-605.
- Vandeyar, T. (2020). The academic turn: Social media in higher education. *Education and Information Technologies, 25*, 5617-5635.
- VanDoorn, G., & Eklund, A. A. (2013). Face to Facebook: Social media and the learning and teaching potential of symmetrical, synchronous communication. *Journal of University Teaching & Learning Practice, 10*(1), 6.
- Veeriah, V., Oh, J., & Singh, S. (2018). Many-goals reinforcement learning. *arXiv preprint arXiv:1806.09605*.
- Verderber, K. S., Verderber, R. F., & Sellnow, D. D. (2013). *Communicate!* : Cengage Learning.

- Vogt, W. P. (2006). Quantitative research methods for professionals in education and other fields. *Columbus, OH: Allyn & Bacon.*
- Waizenegger, L., McKenna, B., Cai, W., & Bendz, T. (2020). An affordance perspective of team collaboration and enforced working from home during COVID-19. *European Journal of Information Systems, 29(4), 429-442.*
- Whited, D. A. (2016). *A case study on the effectiveness of using social media tools for project communication.* Capella University,
- Widiantoro, S. S., Ernawati, E., Lainsamputy, F., & Sumarmi Sumarmi, F. X. (2021). Effectiveness of Smartphone Apps and Team Supports by Social Media Approaches to Promote Physical Activity Levels among Indonesian Nursing Students: Feasibility Study. *European Journal of Molecular & Clinical Medicine, 7(10), 4484-4494.*
- Wilson, S. (2008). Research is ceremony: Indigenous research methods.
- Wright, S., O'Brien, B. C., Nimmon, L., Law, M., & Mylopoulos, M. (2016). Research design considerations. *Journal of graduate medical education, 8(1), 97-98.*
- Yakin, I., & Tinmaz, H. (2013). Using Twitter as an instructional tool: A case study in higher education. *TOJET: The Turkish Online Journal of Educational Technology, 12(4).*
- Yates, S., & Lockley, E. (2018). Social media and social class. *American Behavioral Scientist, 0002764218773821.*
- Yvonne Feilzer, M. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of mixed methods research, 4(1), 6-16.*
- Zhang, X., Chen, H., de Pablos, P. O., Lytras, M. D., & Sun, Y. (2016). Coordinated implicitly? An empirical study on the role of social media in collaborative learning. *The International Review of Research in Open and Distributed Learning, 17(6).*
- Zhang, Z., & Jia, M. (2010). Using social exchange theory to predict the effects of high-performance human resource practices on Corporate Entrepreneurship: Evidence from China. *Human Resource Management, 49(4), 743-765.*



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## **APPENDIX I**

### **Survey Questionnaire**

You are invited to participate in the study titled “The Impact of Social Media as an Integral Communication Tool for Building Effective Teams”. This study is conducted by Mr. Muhammad Adnan, Master of Philosophy Student (Media, Culture and Creative Arts), and supervised by Professor Beena Giridharan, Curtin University Sarawak Malaysia. The questionnaire that forms a part of the current study, has been reviewed, and approved for administration to participants.

The research aims at examining the impact of a communication tool, such as social media in creating teamwork efficiency. The objectives of this research are to examine the impact of social media as an integral communication tool in building effective teams and students’ learning, relationship management in building effective teams for students’ learning and goals reinforcement in building effective teams for students’ learning.

The survey should take about 5-10 minutes to complete. Your participation is completely voluntary, and you are free to withdraw at any time. Participants in the study will remain anonymous. If you would like a copy of the results of the study, the researcher will be happy to provide one for you. If you have any enquires about this survey, please contact me via email [muhammad.adnan@postgrad.curtin.edu.my](mailto:muhammad.adnan@postgrad.curtin.edu.my) or my phone number +601160800838 for any other clarification.

To participate in this survey, please fill in the attached questionnaire and submit it to the researcher after completion.

By completing and submitting this survey, you are indicating your consent to participate in the study. Your participation is appreciated.

#### **FOR USE IN THE RESEARCH WITH IMPLIED CONSENT**

Please tick the box before proceeding to fill in the questionnaire.

- The information about this research, and an occasion to ask related questions, have been provided to me. Considering this information, I maintain that I perceive the intended purpose, scope and probable risk that might appear with my involvement in this research for which I willingly agree to participate in.

Curtin University Human Research Ethics Committee (HREC) has approved this study. Should you wish to discuss the study with someone not directly involved, in particular,

any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email [hrec@curtin.edu.au](mailto:hrec@curtin.edu.au).

## Survey of:

# **The Impact of Social Media as an Integral Communication Tool for Building Effective Teams**

### **Instructions**

1. Please read the questions carefully and make sure you answer all the questions.
2. Please note that your response will be regarded as strictly confidential and will only be used for research purposes.
3. Indicate your answer by putting a tick (✓) in the selected box.

### **SECTION A**

Indicate your response in the following by ticking the box corresponding to your answer.

#### ***Demographic Information***

1. Gender:  Male  Female
2. Age:  17 - 19 years old  20 - 22 years old  
 23 - 25 years old  Above 25 years old
3. Student:  Domestic  International
4. University:  Curtin University  Limkokwing University  
 Swinburne University  Monash University  
 University of Nottingham
5. Year in University:  1<sup>st</sup> year  2<sup>nd</sup> year  
 3<sup>rd</sup> year  4<sup>th</sup> year  
 Other (Please specify year) .....

### **Section B – Likert Scale Questionnaire**

Select the answers for the following questions based on how much you agree with the point of view in the item.

**SA = Strongly agree; A = Agree; N = Neutral; D = Disagree; SD = Strongly Disagree**

<b>Social Media</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
1. I use social media applications i.e. WhatsApp, Facebook, Twitter etc.	<input type="checkbox"/>				
2. I am aware of social media applications i.e. WhatsApp, Facebook, Twitter etc.	<input type="checkbox"/>				
3. I use a number of social media applications.	<input type="checkbox"/>				
4. Social media has an influence in our daily routine.	<input type="checkbox"/>				

<b>Communication Tool</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
1. Social media is a useful communication tool for team engagement.	<input type="checkbox"/>				
2. It is easy for me to use social media to interact with my friends.	<input type="checkbox"/>				
3. My friends and group mates in class use social media application to interact with one another.	<input type="checkbox"/>				
4. We use social media applications for interacting as a group, for assignments.	<input type="checkbox"/>				
5. I experience some difficulties while using social media applications.	<input type="checkbox"/>				

**Section C – Likert Scale Questionnaire**

Select the answers for the following questions based on how much you agree with the point of view in the item.

**SA = Strongly agree; A = Agree; N = Neutral; D = Disagree; SD = Strongly Disagree**

<b>Student’s Learning</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
1. I am happy using social media applications for my study purposes.	<input type="checkbox"/>				
2. I see improvement in my learning by using social media applications.	<input type="checkbox"/>				
3. Social media applications resolve study problems in our group tasks and assignments.	<input type="checkbox"/>				
4. Social media develops good communication among the group for learning.	<input type="checkbox"/>				
5. I suggest students use social media applications.	<input type="checkbox"/>				

**Section D – Likert Scale Questionnaire**

Select the answers for the following questions based on how much you agree with the point of view in the item.

**SA = Strongly agree; A = Agree; N = Neutral; D = Disagree; SD = Strongly Disagree**

<b>Effective Teams</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
1. Social media is an effective tool for group tasks and assignments.	<input type="checkbox"/>				
2. I am of the view that quality of work in group tasks is increased by use of social media.	<input type="checkbox"/>				
3. In my opinion social media is an effective tool for interaction in teamwork.	<input type="checkbox"/>				
4. Social media creates good bonding between team members for group work.	<input type="checkbox"/>				

<b>Relationship Management</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
1. Social media is an effective tool for relationship building.	<input type="checkbox"/>				
2. It helps to build good relations while performing study tasks.	<input type="checkbox"/>				
3. It reduces cultural differences among students in classroom.	<input type="checkbox"/>				
4. I am of the view that social media helps group members to have good relationships, irrespective of multicultural backgrounds.	<input type="checkbox"/>				

<b>Goal Reinforcement</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
1. Social media reinforces goals in a study group tasks.	<input type="checkbox"/>				
2. Goals can be achieved better by using social media in group tasks.	<input type="checkbox"/>				
3. Frequent notification in social media applications ensure goals reinforcement.	<input type="checkbox"/>				

<b>Feedback:</b>
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## APPENDIX II

### PARTICIPANT INFORMATION STATEMENT

<b>HREC Thesis Number:</b>	HRE2018-0601
<b>Thesis Title:</b>	The Impact of Social Media as an Integral Communication Tool for Building Effective Teams
<b>Principal Investigator:</b>	Professor Beena Giridharan, Deputy Pro Vice Chancellor, Curtin University, Malaysia
<b>Version Number:</b>	2
<b>Version Date:</b>	01/Aug/2014

#### **What is the thesis about?**

This research aims at studying impact for use of integral communication tool (social media) on building effective teams. The research revolves around student learning and use of social media by them in teamwork. Considering the aim of this research, researcher is using social media as an integral communication tool to find impact on students learning, relationship management in building effective teams and goals reinforcement in building effective teams for student learning.

#### **Who is doing the Research?**

This research is being conducted by Muhammad Adnan under faculty of humanities. This project is self-funded to get Master of Philosophy (Media, Culture and Creative Arts) at Curtin University.

#### **Why am I being asked to take part and what will I have to do?**

For current study I am looking for enrolled undergraduate students currently studying in international universities in Malaysia; Curtin University, Nottingham University, Monash University, Swinburne University and Limkokwing University. Questions will be asked in the form of multiple-choice questions using survey questionnaire to student. This survey will just take 8 to 10 minutes from students to fill and there will not any cost you will pay for survey and also you do not get paid to fill survey. The asked questions are about impact of social media as an integral communication tool based on research objectives, which includes impact on students learning, relationship management and reinforcement of goals for building effective teams.

#### **Are there any benefits' to being in the research thesis?**

For participants, this research study and thesis might not be directly beneficial but can broaden their vision about use of social media. This participation will provide opportunity for students to give their opinion for this research, that how they see social media as communication tool in their learning and for effective team building in group tasks. Furthermore, it is firm believe that this study will assist Malaysia education authorities to use result to conduct further research and work on social media in study systems. Participants are students, so this might help them to carve some potential ideas and interest related to social media for their future study.

**Are there any risks, side-effects, discomforts, or inconveniences from being in the research thesis?**

For this research study there are no probable risks, side effects discomforts involved.

**Who will have access to my information?**

This information for this research project is anonymous because collection of information is not identifiable, that means there is no specific number for key assigned to each survey. The provided information by the participants cannot be identified by anyone even principal supervisor. Collected information will be kept confidential and access to this information will be for: principal supervisor Prof. Beena Giridharan (beena@curtin.edu.my), Co-supervisor A/Prof Eva Dobozy (eva.dobozy@curtin.edu.au) and Curtin University Ethics Committee. As per university rules and constraints the data or information collected will be kept in secure conditions for 7 years once research is completed and can only be destroyed after this time frame. University will keep electronic data password protected and hard copy of data in locker. Access, Correction of data or information can be requested and done under the privacy laws of university. Furthermore, the research work, results can be used and presented for producing research papers and conference papers for publications in journals, and you will not be identified for any results used in any type publications.

**Will you tell me the results of the research?**

As there is no asking for collecting personal information of the participant, I am not able to provide the result of this research on completion.

**Do I have to take part in the research thesis?**

Taking part in a research project is voluntary. It is your choice to take part or not. You do not have to agree if you do not want to. If you decide to take part and then change your mind, that is fine, you can withdraw from the project. You do not have to give a reason; just state that you want to stop. Please let me know you want to stop so I can make sure you are aware of anything that needs to be done so you can withdraw safely. If you chose not to take part or start and then stop the study, it will not affect your relationship with the

University, staff, or colleagues. If you choose to leave the study, I will use any information collected unless you tell me not to. Then, I will destroy any information I have collected from you.

**What happens next and who can I contact about the research?**

If you have any inquiries about this survey, please contact me via email [muhammad.adnan@postgrad.curtin.edu.my](mailto:muhammad.adnan@postgrad.curtin.edu.my) or phone number +601160800838 for any other clarification. If you decide to take part in this research, I will ask you to sign the consent form. By signing it is telling me that you understand what you have read and what has been discussed. Signing the consent indicates that you agree to be in the research project. Please take your time and ask any questions, you have before you decide what to do. You will be given a copy of this information and the consent form to keep.

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number: HRE2018-0601). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email [hrec@curtin.edu.au](mailto:hrec@curtin.edu.au).

## APPENDIX III

### CONSENT FORM

<b>HREC Thesis Number:</b>	HRE2018-0601
<b>Thesis Title:</b>	The Impact of Social Media as an Integral Communication Tool for Building Effective Teams
<b>Principal Investigator:</b>	Professor Beena Giridharan, Deputy Pro Vice Chancellor, Curtin University, Malaysia
<b>Version Number:</b>	2
<b>Version Date:</b>	01/Aug/2014

- I have read the information statement version listed above and I understand its contents.
- I believe I understand the purpose, extent, and possible risks of my involvement in this thesis.
- I voluntarily consent to take part in this research thesis.
- I have had an opportunity to ask questions and I am satisfied with the answers I have received.
- I understand that this thesis has been approved by Curtin University Human Research Ethics Committee and will be carried out in line with the National Statement on Ethical Conduct in Human Research.
- I understand I will receive a copy of this Information Statement and Consent Form.

<b>Participant Name</b>	
<b>Participant Signature</b>	
<b>Date</b>	

**Declaration by the researcher:** I have supplied an Information Letter and Consent Form to the participant who has signed above, and believe that they understand the purpose, extent and possible risks of their involvement in this thesis.

<b>Researcher Name</b>	Muhammad Adnan
<b>Researcher Signature</b>	
<b>Date</b>	