

**Curtin Business School**

**Lifting the Veil on Teamwork: Evidence from Students' and  
Employers' Perspectives**

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**This thesis is presented for the Degree of**

**Doctor of Philosophy  
of  
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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.

Signature:

Date: August, 2012

## ABSTRACT

Universities are challenged to equip students with transferable key generic skills for use in varied contexts within ‘real’ workplace environments; that is, to ensure the development of diversified graduates who are ‘work-ready’ for the 21<sup>st</sup> century. Demonstrable teamwork skills have been identified as critical not only to business graduates about to assume employment, but also to those individuals who are currently in the workforce. Yet, despite the predominance of experiential, team-based projects across the curricula to promote students’ active engagement in the learning process and skills development, criticisms continue to be leveled at business schools and the quality of their graduates. Specifically, broad reports from employers claim that business graduates lack the teamwork skills needed to meet the demands of ‘real’ workplace settings. Many research studies have also indicated that academic staff often have little understanding of how effectively to design and support active learning pedagogy so that its full potential is realised. The nebulousness of how to best teach teamwork skills that will best prepare graduates for success in the corporate world may be due partially to the lack of shared meaning or perspective as to what these teamwork skills are; particularly for teamwork skills as needed in the context of HE than those employers expect graduates to demonstrate. Underlying the dilemma is the recognition that research has often focused on how teams can be managed without describing what teamwork really is or on the improvement of one construct (e.g., team performance) to the exclusion of others.

The current study utilised a multistrand sequential mixed methods research design (Teddlie & Tashakkori, 2003) to carry out a twofold purpose. **Firstly**, in Strand One, the research focused on examining specific teacher-controlled variables of the learning environment that students perceive as influencing their teamworking ability development and overall satisfaction with the team experience. The key premise being that, by determining what students perceive to be important for their team experience to be successful, insights drawn can aid faculty understanding of, and capacity to structure, student teams so that the potential of students is supported and their needs met. A hypothetical model of team effectiveness (Figure 13, p. 77), as derived from extant

literature, underpinned the research and six pairs of hypotheses on student teamwork ability and satisfaction were tested. The quantitative data involved the collection and analysis of survey data with a small qualitative component embedded within the primary database to serve a supportive role. Multiple regression and ANOVA procedures were used to analyse the quantitative data, and themes and patterns were identified in the qualitative data. Results indicate that multiple constructs of the learning environment under teacher control can, and do, significantly influence both the development of students' teamworking ability and their overall satisfaction with the team experience. Qualitative findings substantiated the empirical findings and provided some support for the inclusion of cognitive-affective processes and reflective practices; constructs thus far missing in team effectiveness models in available literature. As a result of the findings from Strand One, an interim research outcomes model (Figure 23, p. 157) is presented.

**Secondly**, in Strand Two, so as to help close the existing gap between perceptions and expectations as related to students' teamworking competency, focus was given to exploring students' and employers' conceptualisation of teamwork; particularly, what skill requirements held at the individual level make a team successful. The key premise being that, if teamwork skills (and facets thereof) most valued by employers are identified, then the team projects that educators design should enable students to acquire the 'requisite' teamwork skills that meet the employers' expectations. The qualitative data generated from semistructured interviews held with research participants in relation to the topics under study were analysed using content analysis. The central findings from Strand Two show a close alignment of students' and employers' perspectives as to what a team actually is and the generic skills constituting the teamwork skill set. As a further result of data analysis, the findings indicate a disparity between expectations and performance of graduates' teamwork competences—critical gaps found were in relation to graduates' communication skills, interpersonal skills and attitudinal attributes.

As a result of the synthesis of research findings from Strands One and Two, a new research outcomes model (R.O.M.) for optimising teamwork and performance outcomes within the HE context is presented. This illustrative model (Figure 24, p. 207) is called

‘A Dynamic Model of Teamflow’ (DMTf), reflecting a more holistic perspective and integration of a number of relevant internal and external elements necessary for improving collaboration—a kind of collaboration where individuals and their team generate synergy and achieve outstanding results within an optimising environment. The DMTf model has relevance and widespread applicability to curriculum developers and educators as they design learning environments to improve students’ flow experiences, thereby enabling them to acquire the ‘requisite mix’ of teamwork skills that meet employers’ expectations.

A number of contributions have constructed in this study. The first contribution is that the study captured students’ perceptions of their team experiences which prior research contends has not been adequately studied. This is significant in that the findings can provide curriculum developers and teaching staff with the knowledge needed to make judgements about the quality of teaching, learning design, delivery and its support which, in turn, can be used for producing change. Second, the quantitative methodology used in Strand One of the study empirically confirm the existence of the considered constructs and relations among them. In addition, the qualitative data obtained by means of two open-ended questions delivered rich insight into students’ perceptions as to how and why relationships develop in team contexts. A third contribution of the research is the generalisability of findings to a larger population through the large sample size ( $n = 319$ ) and nonresponse bias. A fourth contribution of this study is that it extends previous team research by determining the teamwork skills and facets thereof most valued by employers and expected of graduates upon graduation. Notably, prior to this study, explanation as to what teamwork skills graduates are expected actually to bring to the workplace were scant. A further contribution as a result of the synthesis of findings from Strands One and Two of the study is the advancement of the DMTf model (Figure 24) that may be used as the starting point for future research.

## DEDICATION

For *Trevor*, for being the kind and gentle person that you are.

For *Allister and Nellie*, for teaching me the things in life that truly matter.

For *Brian and Anthony*, for being great sources of inspiration.

For *Yuki and Ruby*, my little ones who truly make my heart smile.

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## TABLE OF KEY ABBREVIATIONS

<b>AACSB</b>	Association to Advance Collegiate Schools of Business
<b>ABS</b>	Australian Bureau of Statistics
<b>ACCI</b>	Australian Chamber of Commerce and Industry
<b>ANOVA</b>	Analysis of Variance
<b>ASX</b>	Australian Stock Exchange
<b>BCA</b>	Business Council of Australia
<b>BComm</b>	Bachelor of Commerce
<b>BIHECC</b>	Business Industry Higher Education Collaboration Council
<b>BIS</b>	Department for Business, Innovation, and Skills
<b>CBC</b>	Conference Board of Canada
<b>CEOs</b>	Chief Executive Officers
<b>CEQ</b>	Course Experience Questionnaire
<b>DEEWR</b>	Department of Education, Employment and Workplace Relations
<b>DEST</b>	Department of Science and Training
<b>EOWA</b>	Equal Opportunity for Women in the Workplace Agency
<b>FTSE</b>	Financial Times and the London Stock Exchange (UK)
<b>GCA</b>	Graduate Careers Australia
<b>GED</b>	Graduate Employability Development
<b>GFC</b>	Global Financial Crisis
<b>HE</b>	Higher Education
<b>HEC</b>	Higher Education Council
<b>HEFCE</b>	Higher Education Funding Council for England
<b>HEIs</b>	Higher Education Institutions
<b>HR</b>	Human Resources
<b>HRSDC</b>	Human Resources Development Canada
<b>HREC</b>	Human Research Ethics Committee
<b>IER</b>	Institute for Employment Research
<b>ILO</b>	International Labour Organisation
<b>IPO</b>	Input-Process-Output
<b>KSAs</b>	Knowledge, Skills, and Abilities
<b>LTSN</b>	Learning and Teaching Support Network (UK)
<b>MM</b>	Mixed Methods

<i>n</i>	Sample Size
<b>NACE</b>	National Association of Colleges and Employers
<b>NCVER</b>	National Centre for Vocational Education Research
<b>NZQA</b>	New Zealand Qualifications Authority
<b>NZSX</b>	New Zealand Stock Exchange
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>QUAL/qual</b>	Qualitative
<b>QUAN</b>	Quantitative
<b>R&amp;D</b>	Research and Development
<b>SCANS</b>	Secretary's Commission for Achieving Necessary Skills
<b>TEQSA</b>	Tertiary Education Quality and Standards Agency
<b>TQM</b>	Total Quality Management
<b>UK</b>	United Kingdom
<b>USA</b>	United States of America
<b>VET</b>	Vocational Education and Training
<b>WTO</b>	World Trade Organisation

# CHAPTER 1

## OVERVIEW OF THE RESEARCH STUDY

### 1.0 Introduction

In Chapter 1, the context for the study is detailed; specifically, national and organisational priorities for key generic or employability skills development and collaboration in corporate and university contexts. Then, the research study purpose, objectives and questions are given. The research approach, elements of the mixed methods design and an overview of the methods utilised for each separate strand of the study are documented. Next, the significance of the study is presented and a final structural overview made of the research thesis.

### 1.1 Research Study Background

By means of globalisation, the world has been transformed *from* a collection of closed national markets *to* an integrated international market characterised by competition for goods, services and, increasingly, highly skilled people able to respond to a changing and unpredictable future. The recent financial crisis highlights both the speed and force with which events elsewhere can affect Australia. The consensus, in both developed and developing countries, has been that higher education (HE) is critical to a nation's long term economic success and social wellbeing (Department of Business, Innovation, & Skills [BIS], 2009; Department of Education, Employment, & Workplace Relations [DEEWR], 2008; Leitch, 2006).

HE has been identified as a service industry (World Trade Organisation [WTO], 2000) valued at \$2.2 trillion worldwide (Savage, 2004) and worth over \$9 billion to the Australian economy (Australian Bureau of Statistics [ABS], 2007). In fact, HE is Australia's largest services export and third largest export earner after coal and iron ore (IDP Education, 2008; Reserve Bank of Australia, 2008); thereby making it a very

relevant and substantial component of the economy. In addition, it is widely recognised that HE plays a pivotal role in contributing to the modern economy by meeting the demands of business, industry and professional bodies for highly-skilled graduates (Organisation for Economic Cooperation and Development [OECD], 2008). As Robinson (2000, p. v) stated: “The skills base of a nation, and the speed with which skilling can adjust to meet new requirements will be as important, if not more important, in determining economic success than a nation’s natural resources and financial capital”.

It is clear, therefore, that in order to sustain Australia’s long-term competitive position in tertiary education and contribute to the country’s financial and human capital, universities want to produce graduates with discipline-specific knowledge and skills as well as key generic or employability skills which are highly regarded and expected by employers (Business Industry Higher Education Collaboration Council [BIHECC], 2007). Some researchers have gone further, suggesting that graduates’ success in their jobs depends more on *graduate attributes* than on narrow occupation- or industry-specific skills (Finn, 1991; Kember & Leung, 2005). Of note, there is a wide range of definitions and understandings among educators and throughout the extant literature of what constitutes these graduate attributes. Thus, for the purpose of establishing clarity, the author has adopted the view of graduate attributes as defined by the Higher Education Council (HEC) Australia (1992) report *Achieving Quality* as “the skills, personal attributes and values which should be acquired by all graduates, regardless of their discipline or field of study. In other words, they should represent the central achievements of higher education as a process” (p. 20).

In the context of this discourse it is no surprise that tertiary education policy is increasingly important to national agendas. For example, in March 2008, the Australian government initiated a review of the HE sector to examine future directions for tertiary education, its fitness for purpose in meeting the needs of the Australian community and economy, and the options for ongoing reform (DEEWR, 2008). The review panel, led by Emeritus Professor Denise Bradley AC, held national consultations, met with a range of stakeholders and received some 450 formal responses and submissions. The final report

(released December, 2008) known as the *Bradley Review* concluded that, while Australia has developed an effective and efficient HE system, ranked third in the world (Gerritsen, 2008), it faces considerable challenges and issues. Significantly, the *Bradley Review* noted the need for decisive action to improve not only the quality of graduates but also students' engagement and satisfaction with their learning experience. These outcomes were deemed necessary for Australia to meet its productivity goals. The provision of a stimulating and rewarding HE experience is also linked inextricably to students' retention and success along with their likely return to future study if they have had a positive experience previously (DEEWR, 2008; Scott, 2008). Thus, assurances of graduate employability in terms of skills development in HE are being increasingly recognised, scrutinised and debated by various stakeholders, including students themselves.

In response to the Bradley Review, the Australian Government recently established a new national regulatory and quality agency, the *Tertiary Education Quality and Standards Agency* (TEQSA), with powers to regulate HE providers, conduct evaluations of agreed standards and performance, monitor quality and streamline current regulatory arrangements (DEEWR, 2011a). Commencing its operations in early 2012, one of TEQSA's primary objectives is the development of the *Standards Framework*, to enable them to take action in response to identified poor performance and to ensure that strong market entry thresholds are maintained (ibid.). As part of these reforms, it was announced that Professor Ian O'Connor, Vice Chancellor of Griffith University, would chair a reference group to provide advice on the implementation of four HE performance measurement instruments (i.e., University Experience Survey, an Australian version of the Collegiate Learning Assessment, the composite Teaching Quality Indicator, and the Review of the Australian Graduate Survey), with reward funding of \$335.1 million over four years available to HE providers for achievement against performance targets set out in their compacts (DEEWR, 2011b).

Running parallel to national priorities for skills development is discourse from professional and accrediting bodies, in particular, the Association to Advance Collegiate Schools of Business (AACSB)—the largest and longest standing specialised accrediting

agency for business and accounting programmes in the world, consisting of educational institutions, businesses and other entities. Its *Assurance of Learning (AoL) Standards* calls for university administrators and educators to evaluate and externally report how well its school accomplishes the educational aims at the core of its activities; significantly, undergraduate degree programmes should prepare students to enter and sustain careers in the business world and to contribute positively to the larger society (AACSB, 2010). Again, the imperative is for higher education institutions (HEIs) to be more responsive to the needs of society and the economy through: (i) a reappraisal of the purposes of HE; (ii) a call for clearer accountability such as in accreditation; and (iii) the formation of human capital, primarily through the development of diversified graduates capable of rapid learning and innovation, and who are equipped with a set of transferable key generic skills for use in varied contexts within 'real' workplace environments. These trends now characterise the HE sector in many countries, albeit to varying degrees and combinations, and suggest that a focus on method rather than content is needed (Hartley, Woods, & Pill, 2005; Huntington, 2005).

Today, more than ever, universities within Australia are faced with many challenges and opportunities to equip their graduates with a set of skills that is transferable to varied contexts within the 'real' workplace environment; that is to ensure the development of diversified graduates who are 'work-ready' for the twenty-first century. "The economic imperatives of employment and the changing nature of work have long since replaced the school/university/job for life scenario that existed in past years" stated Goldsworthy (1999, p. 2), with the average person changing career paths five times in the span of his or her life (Haskell, 2001). In particular, as business graduates will have to manoeuvre through a wide range of disciplines and contexts, the grounding in a 'core' set of teamwork skills is necessary for 'skilful practice' in private and professional situations after graduation. Demonstrable teamwork skills are critical not only to business graduates about to assume employment, but also to those individuals who are currently in the workforce (Barrie, 2004; Hager, Holland, & Beckett, 2002). Empirical research corroborates that the use of self-directed/managed work teams is one of the most common changes occurring in work settings such that teams are now the primary

building block in most organisations (Baker, Horvath, Campion, Offermann, & Salas, 1999; Devine, 2002). Therefore, it is in the interest of all stakeholders that the teaching of teamwork skills and their development in students are explicitly planned and systematically implemented throughout the undergraduate curriculum. Hence, a thorough understanding of the nature of collaborative learning and the conditions that make it work is needed to enhance teaching, as well as student learning. Further, there must be a shared understanding or conceptualisation of the knowledge, skills and attributes, known also as KSAs, that constitute effective teamwork.

Numbers of research studies have reported that the level of attention focused on students' skills development has increased throughout universities worldwide (de la Harpe, Radloff, & Wyber, 2000; Drummond, Nixon, & Wiltshire, 1998; Leggett, Kinnear, Boyce, & Bennett, 2004). In business education, many tertiary educators have systematically integrated experiential and collaborative learning activities across the business curricula (Anderson, 2005; Daly, 2001; Lilly & Tippins, 2002) as this pedagogical approach can effectively produce other desirable and measurable outcomes (Baker & Campbell, 2005; Johnson, Johnson, & Smith, 2007; Slavin, 1995). Yet, despite the level of attention focused on students' skills development, criticisms continue to be leveled at business schools and their graduates. Significantly, critics claim that students exhibit underdeveloped leadership abilities, little understanding of what business is about *and* poor teamwork skills (de la Harpe et al., 2000; Caspersz, Skene, & Wu, 2005; Hart, 1999; Leggett et al., 2004). Research has also indicated that academic staff often have limited understanding of how effectively to design and support the implementation of an active learning pedagogy so that its full potential is realised (Bacon, Stewart, & Silver, 1999; Feast, 2001; Lizzio & Wilson, 2005; Tempone & Martin, 2003). Consequently, teamwork can be negative experiences and may have deleterious effects not only on the quality of students' learning including skills development but also on their attitudes and perceptions towards future teamworking efforts. Arguably, a first step towards addressing the issue would be to determine what students perceive to be important for their team experience to be successful.

However, the extant literature indicates that students' perceptions of their team experiences have not been adequately studied (Athiyaman, 2001; Gottschall & Garcia-Bayonas, 2008; Hartley, 2005). Specifically, there is limited research on teacher-controlled variables of the learning environment and the team experience from the students' perspective in HE. Although there is growing literature on teamwork in HE, much of the findings, models and frameworks on team dynamics and effectiveness cited in the current literature is based on research of organisational teams or teams in the K-12 educational system (Drury, Kay, & Losberg, 2002; Hartley, 2005).

Further, although literature has shown that the use of teamwork, along with other strategies, significantly can improve the competitive edge, performance and profitability of a business, there is little consensus on what teamwork really is (Lembke & Wilson, 1998; Salas, Sims, & Burke, 2005). Also, while employers and professional bodies have made it clear that by the end of their university studies graduates should have acquired teamwork skills, little explanation has been provided as to what these teamwork skills are and what level of teamwork skills graduates are expected to bring to the workplace (Hodges & Burchell, 2003; Sin & Reid, 2006). Arguably, if teamwork skills and characteristics most valued by employers are identified, then educators should be able to design projects that enable students to acquire the 'requisite' teamwork skills and facets thereof that meet the employers' expectations. Concomitantly, graduates need to take responsibility for reviewing their own skills, addressing gaps and articulating their competencies into a language that resonates with employers if they wish to convert their employability potential into actual employment that can meet their needs (BIHECC, 2007; Knight & Yorke, 2004). As Wallace (1999, p. 6) stated, today's learners "must view their learning path as the critical life determinant which it is and pursue it with purpose and determination".

## 1.2 Research Study Purpose, Objectives and Questions

The purpose in the current research study is twofold.

First, **Strand One** of the study focused on examining the relationships among teacher-controlled variables of the learning environment that students perceived as significantly influencing their (a) teamworking ability development, and (b) overall satisfaction with the team experience, as outputs of team effectiveness. It was envisaged that insights drawn would inform the development of strategies and the recommendation of a ‘best practice’ model of team effectiveness, and help educators improve the quality of students’ collaborative experiences and outcomes which, in turn, may enhance their employability. The first strand of the study was guided by three secondary research questions:

*SQ<sub>1</sub>*: What teacher-controlled variables in the learning environment significantly influence students’ teamworking ability development?

*SQ<sub>2</sub>*: What teacher-controlled variables in the learning environment significantly influence students’ overall satisfaction with the team experience?

*SQ<sub>3</sub>*: What ‘best practice’ model of team effectiveness can be recommended to academics to better facilitate and support their students’ teamworking efforts and enhance the successful development of outcomes?

To meet the objectives of this strand of the study six pairs of hypotheses on student teamwork ability and satisfaction were tested, as fully outlined in Chapter 4, page 88. The independent variables measured were learning community, intellectual motivation, appropriate assessment, appropriate workload, good teaching and clear goals and standards.

The second but related purpose of the current research study was to help close the existing gap between perceptions and expectations as it relates to employers’ demands for business graduates equipped with skills needed for teamworking in ‘real’ world

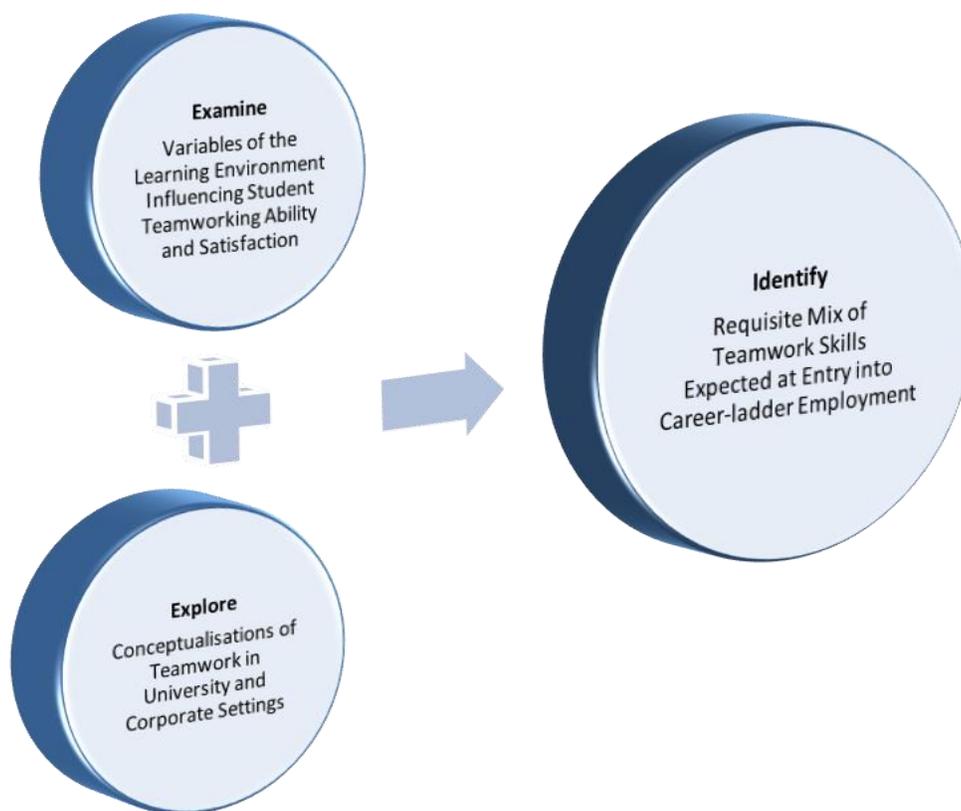
business settings. Hence, **Strand Two** of the research study relied on an explorative approach to focus on gaining a better, more nuanced understanding about how teamwork is conceptualised in both university and corporate settings as experienced by those directly involved; viz., undergraduate business students in their final semester before graduation and Australian employers. The following secondary research questions were developed to meet the objectives in this strand of the study and to guide the research process:

*SQ<sub>4</sub>*: To what extent are students' and employers' conceptualisations of teamwork skills aligned?

*SQ<sub>5</sub>*: To what extent do employers perceive a difference between graduates' teamwork skills expected before employment and those demonstrated once employed?

Guiding the research study was the overarching question: What 'requisite mix' of teamwork skills are expected of a business graduate entering career-ladder employment? It was in seeking to answer the main question that inferences drawn from both focus areas of the current research will assist curriculum designers and educators to better facilitate the development of business students' teamworking skills and, ultimately, enhance their employability. The major research objectives of the study are presented in Figure 1.

**Figure 1: Major Research Objectives**



### **1.3 Research Approach**

According to Brewer and Hunter (1989, p. 17), given the complexity of social phenomena, most studies in the social and behavioural sciences and applied disciplines now use mixed research methods (MM) as a matter of course, as such an approach permits investigators “to attack a research problem with an arsenal of methods that have no overlapping weakness in addition to their complementary strengths”. In keeping with recommendations by MM proponents across the wide field of education, the author utilised a MM approach which involved collection and analysis of both numeric and textual data at different points in the study. Additionally, the current study was approached from the pragmatic paradigm which embraces the use of multiple, diverse philosophical positions and methods to best answer the research questions.

## 1.4 Research Design

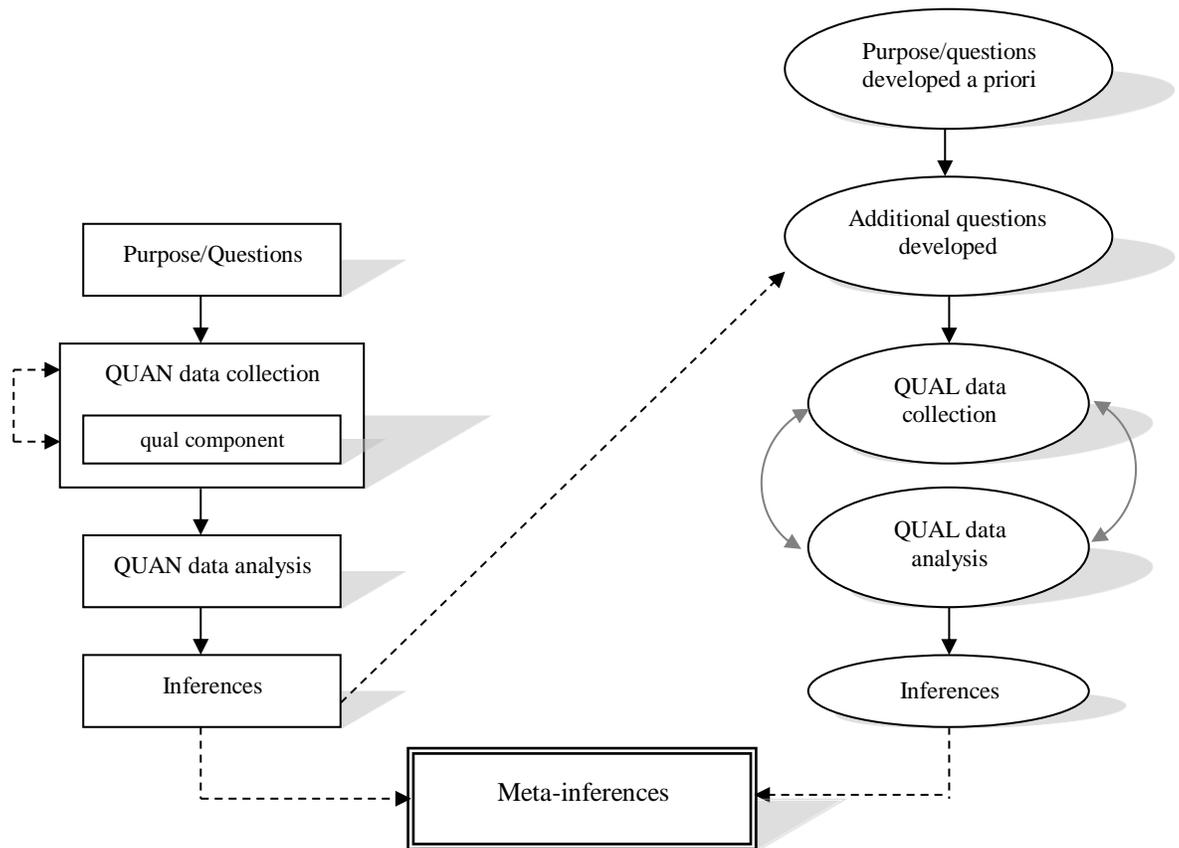
Predominantly, the strategy of inquiry that framed the current study incorporates aspects of Teddlie and Tashakkori's (2003) sequential mixed design, which is characterised by two strands of research, permitting the author to answer both confirmatory (quantitative) and exploratory (qualitative) questions sequentially in a prespecified order.

**Strand One** was a quantitative investigation involving the collection and analysis of survey data with a small qualitative component (viz., two open-ended questions) nested within the primary database to serve a supportive role. According to Creswell, Plano Clark, Gutmann, and Hanson (2003), this is a good example of integrating or mixing at data collection but is typical of the concurrent MM designs. Inferences from this strand of the study, in part, were used as a springboard for the development of additional questions for the second strand.

**Strand Two** was qualitative, using a semistructured face-to-face and one-on-one interview technique. The process of data interpretation was iterative in order to avoid a backlog of qualitative data, as recommended by Silverman (2000).

Meta-inferences were based on findings from both strands of the study so as to help answer the overarching research question. Both strands of the research were given equal status or importance (QUAN/QUAL) with each data set collected and analysed independently and conclusions drawn. A diagrammatical representation of the strategy of inquiry formulated and utilised for this research is shown in Figure 2: denoted as  $QUAN + qual \rightarrow QUAL$ , as per MM nomenclature.

**Figure 2: Sequential Mixed Methods Design**



**Source:** Adapted from Tashakkori and Teddlie (2003, p. 688); Creswell et al. (2003, p. 226).

## 1.5 Significance of the Research Study

The study focused on how a more coherent picture of the core processes constituting teamwork and the multicomponent variables that reliably influence overall team effectiveness can be framed so as to reduce the expectations gap relating to employers' repeated demands for business graduates equipped with the skills needed for teamworking in 'real' world corporate settings. The significance of the study with respect to several key stakeholders is as follows:

***The Scholarly Community*** – The research will inform the wider Higher Education community about how teamwork is conceptualised in the workplace in contrast to that of the university context. The research will generate empirical evidence that will advance a holistic, integrative model of team effectiveness that addresses deficiencies in the current team literature and will serve as a departure point for team researchers and educators concerned with deepening their understanding of, and capacity to build, student teams so that the potential of students is supported and their needs met.

***Australian Universities and their Business Schools*** – The current research meets the strategic direction of the newly established TEQSA that will evaluate the performance of universities and accredit providers who actively promote and foster a diversified teaching and learning environment, and demonstrate that their graduates have the capabilities required for successful engagement in today’s complex world (DEEWR, 2009). Also, it will be of relevance to university administrators whose institutions are seeking AACSB accreditation.

***University Marketers*** - The marketing of Higher Education has brought with it certain challenges. As such, marketers need to develop good relationships not only with students and faculty but also with employers and other institutions because their concerns and needs are indispensable to the university’s existence (Gray, 1991). It is likely that many graduates will find employment across national and international boundaries and deal with people from various cultural backgrounds; they will participate in academic alliances that enable employees to gain international exposure and have credentials for global employment that will confer an edge to university and multiple partners in future student recruitment (Chan, 2004). Thus, the current research may support the university’s international profile and accreditation of its business programmes by highlighting the development of skills among its graduates.

***Business and Industry*** – The current research will inform the development of skills education and practices that encompass the teamwork skill set required of business graduates entering career-ladder employment. Business and industry will have an

increased opportunity to contribute to the overall structure of university-based courses by providing their perspective of effective teamwork skills as they relate to employability. This can be articulated back into the undergraduate degree programme through curriculum review processes.

*Educators* – Research findings will provide important insights into teacher-controlled variables in the learning environment; variables that must be considered in creating a supportive context where teams of business students can be as successful as possible. Also, findings will inform the curriculum review process within undergraduate Bachelor of Commerce (BComm) programmes and enable greater alignment to be achieved between the perspectives of academics and employers on how to best develop desirable graduates. An increased awareness will be gained among academics of the importance of teamwork skills as a key generic skill.

*Graduating Students* – The research will increase graduating students’ awareness that curricula are structured with opportunities that facilitate the development of their teamwork skills. They will be provided with the insights that emerge from the study in terms of employers’ perspectives of the importance of teamwork skills as it relates to employment. This explicit information may act as a motivator for students to engage actively with opportunities for skills development afforded to them throughout their degree programme. Also, findings may confer a positional opportunity and advantage to international students currently studying in Australia; i.e., for those who may be seeking to migrate to, and work in, Australia upon graduation.

## **1.6 Structural Overview of the Research Study**

The structure of the research study thesis spans seven chapters. It is supported by appendices and a comprehensive reference list of relevant publications.

The first chapter provides an introduction and overview of the study, orienting the reader to the purpose of the research, identifying existing gaps in the literature and clarifying

the focus of the overarching research question. Also, a synopsis of the research design and methods are given.

In the second chapter, a review of the relevant extant literature is presented in two parts and gaps in the current body of knowledge are distinguished more specifically. Many arguments are presented in providing a network of structural support for the timely development and presentation of a hypothetical, integrated model of team effectiveness. The model, delineated in Chapter 3, forms the basis of the current research study methodology.

The research design and methods used to conduct the multistrand, MM study are described in Chapter 4. A comprehensive discussion is provided of the MM strategy of inquiry or methodology utilised for the research, as well as the specific methods of data collection and analyses of responses to answer the research questions. In addition, evaluation of the research design and ethical considerations for participants are addressed.

The fifth chapter, which is organised in two main parts, commences with the psychometric properties of the research instrument, the descriptive statistics that summarise the data, and the results of the multiple regression analyses conducted to examine the testable hypotheses developed for Strand One of the research. In Part Two of the same chapter, findings are presented and discussed in relation to the literature review (Chapter 2), the research questions developed for Strand One of the study and the hypothetical model (Chapter 3). Conclusions drawn results in the presentation of an interim research outcomes model (I.R.O.M.). Recommendations for improving educational practice are made throughout the discussion.

In Chapter 6, the objectives of Strand Two of the research study in relation to the qualitative findings and the literature reviewed in Chapter 2 are presented and discussed. The research questions developed for Strand Two of the study are answered and a final synthesis of the findings from both strands of the study made informs the presentation of

a new research outcomes model. This model articulates new understandings of the range of interrelationships and opportunities and actions that are possible for optimising students' teamwork and performance outcomes within the HE setting.

In Chapter 7, the concluding chapter of the thesis report, a review of the research and description of how the research purpose has been fulfilled is presented. Then, the overarching question that guided the research study is answered. Next, the limitations and contributions of the research, as well as suggestions for further research are included. Lastly, a final summary is made of the chapter.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter comprises a comprehensive review of theoretical and empirical research findings on collaborative learning as an efficacious pedagogy for skills development in Higher Education (hereinafter written as HE), and of approaches to modeling or framing teamwork and overall team effectiveness found in the extant literature and believed to be most relevant to the current research study.

In initiating the review of literature the decision was made that, in order to include discussions aimed at enhancing students' employability skills (such as teamwork skills), the starting point for the analysis should focus on government employability policies informed by human capital theory and the role that HE plays in this relationship. It was considered that this would lead to a broader view of graduate employability development and, potentially, a greater understanding of the conceptualisation of key generic skills and specifically teamwork skills, in order to inform and improve their provision in HE. As Bennett, Dunne, and Carré (2000, p. 15) stated: "any study of these skills in higher education first necessitates a conceptualisation that provides both a clear and justified definition, together with a theoretical model of course provision in terms of the knowledge and skill outcomes planned for and taught". Similarly, Hartley, Woods, and Pill (2005) asserted that if educators are adopting techniques such as experiential and collaborative learning to encourage students to take more responsibility for their own learning, then they need to consider how they operate as members of staff to support students who are working in this way.

It is to this end that the review of literature was undertaken with the present chapter, Chapter 2, organised into two main parts:

In **Part One**, the increasing importance of enhancing graduates' employability is highlighted and the distinction made between the concepts of employment and employability. Then, policies and debates that seek to enhance graduates' employability through educational initiatives with the view to boosting national economic wealth are discussed along with tensions within the employability agenda. This is followed by a review of the more widely known and respected frameworks for capturing employability development in the HE curriculum.

In **Part Two**, after consideration is given to the value of student team-based projects and several of the major related problems, the discipline of teamwork is explored. Specifically, the more salient features believed to characterise a team and the nature of teamwork and team effectiveness from a conceptual perspective are clarified and elaborated. Focus is then given to two team effectiveness models advanced in extant literature and considered to be most relevant to the current research study. The shortcomings of these models are addressed and a final summary made of the chapter.

## **2.1 Part One - Graduate Employability and the Role of Higher Education in a Knowledge-driven Economy**

### **2.1.1 Introduction**

Government policy and official discourse continues to depict graduates as being an elite social and occupational group which will access premium labour market opportunities and rewards, and fulfil their potential through careers as knowledge workers (Tomlinson, 2007). Therefore, enhancing graduates' employability has been identified as a key economic and social target by governments and businesses worldwide. Further, considerable evidence has shown that HE plays a vital role in contributing to the modern economy. However, the extent to which HE can affect change is ardently questioned. A major task facing universities is that of helping students maximise their potential for obtaining employment, and succeeding in a knowledge-driven economy (Harvey, 2000; Little, 2001). Additionally, the focus on employability responds to students' primary

motivations for entering HE (Carter, Bishop, & Kravits, 2005; Watts, 2006). Yet, despite the consensus among key stakeholders of the need to enhance the employability of graduates, this is not a straightforward task.

Employability is a multifaceted concept, open to a range of competing interpretations and approaches for development, thus making it difficult to define and measure (Harvey, 2001; Holmes, 2001; Yorke & Knight, 2006). Also, there is much debate as to what extent HE can influence students' employability (Barrie, 2006; Drummond et al., 1998; Fallows & Steven, 2000). However, Washer (2007, p. 57) stated that:

The world in which graduates are expected to compete for jobs and then function as entry-level staff does not allow them the luxury of such a debate. Graduates must be able to demonstrate that they possess skills that employers value. More specifically, graduates need to be able to identify where in their undergraduate studies they learned those skills.

Adding to the complexity of this issue is the tendency to measure employability in terms of whether a graduate obtains a job within a given period (usually six months) after graduation (GCA, 2007; Tomlinson, 2007). However, Harvey, Locke, and Morey (2002), among others, stressed that employability should not be confused with the employment rate of graduates from an institution because it implies a direct link between institutional activity and graduate recruitment success, whereas participation in HE is but one among many factors that influences the employability of graduates. Therefore, researchers have asserted that, before employability can be captured in the curriculum, a distinction must be drawn between employability as opposed to employment (Lees, 2002; Pool & Sewell, 2007). This preliminary issue is addressed in the next section, followed by a full review of the literature pertaining to the HE interface with graduate employability.

#### **2.1.1.1 Employment and employability are different concepts.**

Employment is synonymous with an individual having a job, whereas employability is about a set of achievements, skills, understandings, experiences and personal attributes

in tandem with critical reflective abilities that make graduates more likely to secure fulfilling employment and be successful in their chosen occupations and the wider community (Harvey et al., 2002; Thomas & Jones, 2007). This differentiation fits with ideas of Knight and Yorke (2004, p. 8) who contend that employability can be understood as a concern with learning that has benefits for citizenship, lifelong learning and life in general—“many of the skills required for success in work are the same as those needed for success in life more generally”. Paradoxically, the majority of knowledge workers can only capitalise on their knowledge, skills and experiences within the constructs of employment where they are vulnerable to short-term or temporary contracts, downsizing and redundancy, which further highlights the need of maintaining one’s employability in both the internal and external markets (Brown & Hesketh, 2004).

### **2.1.2 Towards an Understanding of the Higher Education Interface with Graduate Employability**

In many leading countries, the relationship between HE and its contribution to national economic regeneration and growth is long-standing. In the United Kingdom (UK), this connection was articulated by the Robbins Report (1963) and the more recent Dearing Report (1997), which proved seminal in shaping the provision of its higher education; the latter concluded that a larger workforce, with more advanced knowledge and skills was the key to greater national economic success (Bennett et al., 2000; Dearing, 1997). Similar government reports and position papers also emanated from employers and professional and accrediting bodies in *Canada* (Conference Board of Canada [CBC], 2000); Human Resources and Skills Development Canada [HRSDC], 1994; New Brunswick Commission on Higher Education, 1993), *New Zealand* (New Zealand Qualifications Authority [NZQA], 1993) and the *United States of America* (Secretary’s Commission of Achieving Necessary Skills [SCANS], 1991). The employability of graduates in terms of skills development has remained a principal focus on the agenda of governments and employers throughout the world (Curtis & Denton, 2003; Fisher & Rubenson, 1998; International Labour Organisation [ILO], 2000; Kearns, 2001). Moreover, increased public expenditure to HEIs, particularly universities, has resulted in the emergence of graduate employability as a dimension of quality assurance regimes

characterising HE systems of today (Barrie, 2004; Currie & Newson, 1998; Little, 2001).

In Australia, the HE interface with employability featured prominently in the reports of *Karmel* (1985), *Finn* (1991) and *Mayer* (1992). Members of the Finn committee, for example, indicated that the most successful organisations were those that encouraged employees to be “multi-skilled, creative and adaptable” and, further, asserted that all graduates would need “a foundation of basic skills and a range of broad skills and attributes which are generally relevant to the world of work without being occupation- or industry-specific” (Finn, 1991, p. 6). Several areas of employment-related key competencies were identified in both the Finn and Mayer reports and new national policies were established for participation and attainment levels in post-compulsory education and training (Finn, 1991; Mayer, 1992; Marsh, 1997; Patterson & Bell, 2001). The key competencies identified in the Mayer report were later endorsed as a nationally recognised framework for education and industry (McDonald et al., 2000; Patterson & Bell, 2001) and hailed as “a major milestone in the establishment of generic skills in Australia” (National Centre for Vocational Education Research [NCVER], 2003, p. 3). Efforts continued towards implementing the Mayer key competencies in Australian schools, and vocational education and training (VET) programmes (Jasinski, 1996; Julian, 2004); however, attention was diverted to other reforms as “the recent emphasis in Australia seems to have shifted towards ‘behavioural competencies’, ‘new’ generic skills required for the knowledge worker, and skills for lifelong learning and future employability” (Dawe, 2004, p. 71). These trends are consistent with those reported in other countries (Curtis & McKenzie, 2002; Kearns, 2001).

In 2001, the Business Council of Australia (BCA), in conjunction with the Australian Chamber of Commerce and Industry (ACCI), undertook a comprehensive four-stage process of research and consultation to clarify what broad set of skills and attributes were required by both entry-level (i.e., graduates) and established employees for successful workplace participation. Perspectives from key senior managers located throughout metropolitan and regional Australia, and across a range of business

organisations and industry sectors, were obtained because “it was recognised that such a framework of skills would need to be relevant to small, medium and large enterprises and able to support the future needs of Australian industry” (Department of Education, Science and Training [DEST], 2002, p. 1). Also investigated were approaches to developing, tracking and assessing the identified skills and how educational providers could play a more effective role in development of these skills (ibid.).

The report *Employability Skills for the Future* proposed a new framework that extended beyond the ambit of the Mayer key competencies to include a wider set of generic skills *and* personal attributes relating to business communication, teamwork, time management and interpersonal and customer relations (ACNielsen, 2000; Allen Consulting Group, 2000; NCVER, 2003). Notably, neither of the aforementioned skills frameworks were adopted by the university sector (DEST, 2002); though universities’ recent statements of graduate attributes are somewhat similar insofar as emphasis is given to skills, values and personal attributes relevant to future employability and other aspects of life, and which should be acquired by all graduates regardless of their discipline or field of study (HEC Australia, 1992). In other words, “statements of generic graduate attributes seek to articulate the nature of the education the university offers to its students and through this an aspect of the institution’s contribution to society” (Barrie, 2004, p. 264).

Becker (1993) and Yorke (2006) contended that the sustained interest in graduate employability reflects an acceptance of the economic importance of human capital, especially through education. According to the theory of human capital, education and training are the two most important investments to the performance of a knowledge-driven economy because people cannot be separated from their knowledge, skills or values in the same way they can be separated from their financial and physical assets (Becker, 1993). To this end, it has been suggested by some that a vital task of government is to provide incentives and foster the conditions that will encourage and support growth in human capital (Romer, 2007; OECD, 2008).

The embodiment of human capital in people with respect to national economic wealth was strongly emphasised by Lord Leitch in his report, *Prosperity for all in the global economy: World class skills*. Commissioned by H.M. Treasury to examine the UK's need for long term skills, Leitch (2006, p. 1) stressed that although the nation has experienced economic strength and stability, with 14 years of unbroken growth and one of the highest employment rates in the developed world, low skills levels will greatly reduce productivity, growth and social equality if not addressed immediately;

In the 21<sup>st</sup> Century, our natural resource is our people – and their potential is both vast and untapped. Skills will unlock that potential. The prize for our country will be enormous – higher productivity, the creation of wealth and social justice. The alternative? Without increased skills, we would condemn ourselves to a lingering decline in competitiveness, diminishing economic growth and a bleaker future for all. The case for action is compelling and urgent. Becoming a world leader in skills will enable the UK to compete with the best in the world.

In addition, in order to improve skills attainment, he asserted that what is required at all levels is a greater awareness of the value of skills, facilitated by a new culture of learning that involves increased engagement and investment by both individuals and employers. “The greater part of what is taught in schools and universities ... does not seem to be the proper preparation for that of business”, Leitch (2006, p. 47) argued. Also, he emphasised that a skills system/framework that can adapt and respond to future market demands would be needed. In addition to these recommendations, Leitch further reinforced the position of the OCED that, as emerging economies such as China and India continue to grow and deliver skills at a moderate cost, the British government and governments of other OCED countries must continually reform their skills policy and frameworks in order to strengthen and maximise their skills-base. The conclusion of Leitch's (2006, pp. 9, 14) report was that “where skills were once a key driver of prosperity and fairness, they are now *the* key driver ... [and] ... to succeed in the new global economy, the UK must raise its sights and aim for world class skills”.

The relationship between human capital and the competitive advantage of nations also may be illustrated by the effects of the burgeoning offshore sourcing that is occurring in

the United States of America (USA). Ahlawat and Ahlawat (2006) highlighted that, while offshore sourcing is not a new corporate strategy in the USA—manufacturing jobs have been moving offshore for the last three decades—the steady ‘flight of white collar jobs’ is a cause for concern, for the impact extends far beyond the current and potential displacement of workers. Ahlawat and Ahlawat (2006, pp. 101-102) argued that “at least 3.3 million jobs in service industries, accounting for \$136 billion in wages, will leave the United States by 2015 for lower-cost countries ... these are not low-level jobs that no American would want, but high skill, high wage positions”. Further, as countries such as China, India and Russia continue investing in human capital by means of building world class educational systems (Mraz, 2004), American businesses operating outside of their own cultural environment will now have a ready supply of highly-skilled graduates at a relatively low cost compared to North America and parts of Europe (Ahlawat & Ahlawat, 2006). In response to these trends, Ahlawat and Ahlawat (2006, p. 101) insisted that “the importance of education cannot be overemphasised enough”, particularly when “the weight of evidence suggests that American students are often ill prepared for the realities of the global economy and to take up global assignment” (Cant, 2004, p. 178). Likewise, Fisher (1998) reported a lack of awareness among Danish graduates for the demands of work and the need for skills that could be transferred to other work contexts.

As a result, researchers (Cant, 2004; Giullian, Odom, & Totaro, 2000; Mraz, 2004) have asserted that if American students, particularly business graduates, are to be prepared for careers in the global workplace, universities and colleges must internationalise their curricula on a continuous basis, which also would involve the creation of international internships, cooperative assignments and exchange programmes with high-quality international schools. In other words, the impetus is for HE in the USA (and elsewhere throughout the world) to pursue and embrace the cause of curriculum review *and* renewal to ensure its programmes are pertinent for today’s graduates. Cant (2004, p. 177) stressed that “students need to develop cultural competencies that will enable them to develop new synergistic approaches that build on similarities while leveraging their differences”. In addition to these recommendations, Ahlawat and Ahlawat (2006)

contended that, despite sizeable USA government-sponsored research budgets and close government- business co-operation, policymakers must devise and advocate strategies to foster and retain research and development (R&D) activities within national boundaries. “It is clear that an international consensus has emerged with regard to the diagnosis of the needs of the future economy, to the prognosis of the skills base necessary to confront it and of the central role of higher education in developing that skills base” stated Bennett et al. (2000, p. 9). However, several researchers have questioned whether investing in human capital is the key to national economic security and, whether employability is little more than a vacuous concept or “a ‘buzzword’ that is used more often than is properly understood” (McQuaid & Lindsay, 2005, p. 197).

Challenging the dominant discourse of knowledge capitalism, the extant literature has shown that even when individuals determinedly invest in undergraduate or postgraduate degree programmes in attempts to secure positive employment outcomes and rewards, not all graduates receive a tangible return on their investment. For example, many graduates take immediate and short-term lower level jobs in order to deal with various personal and financial pressures and, in doing so, they are unable to ‘cash in’ on their investment in HE because they are not utilising their knowledge, skills and attributes gained from their undergraduate studies in their current job (Brown & Hesketh, 2004; Pool & Sewell, 2007; Tomlinson, 2007). Also, despite career aspirations for obtaining well paid and rewarding jobs, the first job for many graduates is likely to be in nontraditional areas of work that may provide only low-level challenges, in which case graduates need to ‘grow’ the job (Harvey, 2001). Notably, Yorke (2006) highlighted that the extent to which graduates may be dissatisfied with their lack of preparedness for the world of work upon graduation is not well researched.

In relation to the current study, then, this raises questions as to what is a graduate-entry level position and what are appropriate job tasks for which competency levels of specific generic skills are required? Equally, is there a distinction in the term ‘skill’ when used in an employment context and when used in an educational context; that is, a difference in the meaning depending upon who is actually using the term? If so, the differentiation

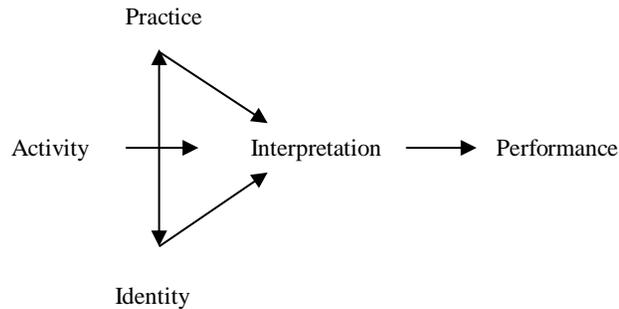
may have implications for graduates' workplace performance reviews, income and career trajectory; moreover, the assumption that the term has the same meaning can lead to misunderstandings between the graduate and employer about what is expected and what counts as competent performance. As Driskell, Salas, Goodwin, and O'Shea (2006) and Holmes (2001) pointed out, employers often used trait terms such as 'willingness to take risks and show initiative', 'flexible', 'responsive to change', 'enthusiastic' and so on to describe how graduates go about their work, about how they perform. The latter argued that employers want graduates to perform in desirable ways—competently and effectively; thus, it is attitudinal attributes that are required rather than skills per se. Notably, in a study investigating the employment of UK graduates, Brennan, Johnston, Little, Shah, and Woodley (2001) found that 81% of British graduates perceived that personality-related factors were the most important criteria in resulting in one being offered a job.

Thus, the issue is that the same behaviour or attitude displayed by a graduate may be interpreted and rewarded by one employer as favourable, but construed by another as insubordinate and deserving of dismissal. For example, 'confidence' could be regarded positively or as a negative aspect of 'arrogance' or 'belligerence'. This is because human behaviour is not objectively observable; rather it requires interpretation (Harré & Secord, 1972). Arguably, whether or not graduates in their current job are actually utilising their skills and attributes gained from their undergraduate studies and being rewarded accordingly could be open to interpretation.

Holmes (2001, pp. 111-114) explained that situated behaviour can be properly understood only by interpreting activity as performance-of-a-kind which is dependent on two conditions: *firstly*, it requires the individuals involved to have an understanding of the social practices appropriate to the arena in which the activity is being carried out, such that the activity is taken to be an instantiation of one of such practices; and *secondly*, there must be a set of identities, or positions, appropriate to that social arena whereby the individual whose activity is under interpretation in the current situation is deemed to occupy one such identity. Figure 3, sourced from Holmes (2001, p. 115),

illustrates the factors associated with determining a behaviour or activity as performance.

**Figure 3: Practice-identity Model of the Interpretation of Performance**



Applying the practice-identity model of performance (Figure 3) to the issue of graduate employability, Holmes (2001) stressed that it is necessary both to determine and understand the nature of graduate identity and the practices of the social arena into which graduates typically enter; thus, practices and identity are interlinked. Understanding employability in this respect is known as the “graduate identity” approach (Holmes, 2001, p. 111).

The aforementioned questions and challenges have led researchers to maintain that the policy focus on raising employability skills not only is inadequate for the changing relationship between HE, employment and national prosperity but is often far more complex than is assumed.

### **2.1.3 Alternative Approaches to Understanding the Higher Education Interface with Graduate Employability**

As suggested by Brown, Hesketh, and Williams (2003), an alternative perspective to understanding the relationship between skills and productivity involves differentiating employability in terms of ‘absolute’ and ‘relative’ dimensions—the absolute dimension relates to the skills, attributes, and knowledge possessed by an individual whereas the relative dimension mandates a reliance on the buoyant laws of supply and demand of

jobs within the labour market. They stressed that the absolute dimension is not inconsequential; however, it is possible for individuals to be highly employable, but not to be in employment due to market congestion caused by the realities of work in a knowledge-driven economy. Notwithstanding, Yorke (2006, p. 10) stated that “higher education can contribute significantly to Brown and colleagues’ ‘absolute’ dimension of graduate employability, even though its contribution to the ‘relative’ dimension is necessarily indirect”.

Further, Brown et al. (2003, p. 122) argued that “it is impossible to understand the intended and unintended consequences of employability policies without understanding both the performance and positional imperatives that it [employability] harbours”. Accordingly, and given the focus on graduate employability in relation to the current research, a graduate’s positional advantage or ranking in the competition for acquiring and maintaining employment will be shaped significantly (not necessarily *determined*) by how well a graduate is able to deploy his/her educational, cultural and social assets along with how prospective employers decode these qualifications and personal qualities as indicators of productive potential (*ibid.*). This is known as positional conflict theory (Brown, 2000). However, Smetherham (2004) emphasised that the mechanisms by which this occurs, and the complex ways that gender, values, choices and attitudes interact with constructions of employability require wider consideration among official discourse.

In short, Smetherham (2004) contended that individuals’ experiences, habits, subjective understandings of ‘self’ and the relative importance that is attached to the two sides of the ‘work/life balance’ are intimately connected to how he or she will navigate and experience labour market opportunities; a view previously argued by Giddens (1991). From this perspective employability may be perceived to be value- and identity -driven, relating to graduates’ own dispositions and biographies and, largely, influenced by their ‘lived experience’ of the labour market (Tomlinson, 2007). As Morley (2001, p. 134) stated, “the same qualifications and skills have different exchange values for different social groups in the labour market”. Also, research has found that differences exist in

how employability is constructed even among individuals who share similar cultural resources (Brown & Hesketh, 2004). Therefore, major policy initiatives must involve more than simply students making “deposits in a bank of skills” (Morley, 2001, p. 133). Further, widening participation encompasses not only the question of entry to HE by students from diverse backgrounds but also the issue of their success (Thomas & Jones, 2007). Research conducted by Brennan and Shah (2003) suggested that factors such as confidence, self-esteem and aspirations might be more important than skills and competences in securing successful employment of diverse groups of students, including those from lower socio-economic backgrounds.

The social construction or *subjective dimension* (Tomlinson, 2007) of employability is of primary importance to the current research. It suggests that those in charge of teaching may first need to determine the ways in which students conceptualise their own employability and future in the labour market so that links between academic and ‘real’ world tasks will be explicit, and practices appropriate to the kinds of positions typically occupied by graduates will be represented; thereby, potentially affecting students’ motivation towards achieving their future goals. Equally, how graduates ‘manage’ their employability, including their preparation for recruitment, is worth consideration because it may inform educators as to how students actually take greater ownership of employability development opportunities during their enrolment in HE. In this sense, employability is a process influenced by several distinct yet interrelated dimensions, rather than as a product of HE only; a view supported by Harvey et al. (2002) and Lees (2002). Additionally, employability requires continuous development in order to be sustainable (Yorke & Knight, 2006). Capturing employability development in the context of HE curricula is discussed in the next section.

#### **2.1.4 Capturing Employability Development in Higher Education Curricula**

When researching the employability development of university graduates it is evident that this is an international concern. There is a spectrum of widely recognised and debated methodologies and frameworks in which curricula can be developed to support or enhance students’ employability, though a key proposition is that “many teaching

activities that promote good learning in the particular subject also promote employability in general” (Pedagogy for Employability Group, 2006, p. 6). Such pedagogical approaches tend to fall within the scope of active learning where some aspects of engagement may be explicit or implicit and where employability intentions and curricular design are *constructively aligned* (Biggs, 2003). Notably, however, there is some ambivalence among students as to what type of employability development opportunities are appropriate and should be provided during their undergraduate studies (Harvey, 2000; Tomlinson, 2007).

The frameworks for capturing employability development in HE curriculum that follow are not only the more widely known but also are the more commonly respected models in the field. It was felt that an examination of these models would lead to the identification of related constructs and areas of focus in terms of skills development, particularly factors that may affect the development of students’ teamwork skills.

#### **2.1.4.1 A review of graduate employability development models.**

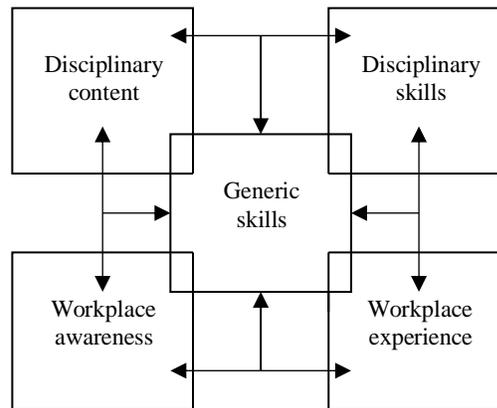
##### *2.1.4.1.1 Bennett, Dunne, and Carré (2000).*

In terms of developing skills in HE curricula that may be transferred into employment, Bennett et al.’s (2000) model (Figure 4) distinguishes five areas of provision in which generic skills interlock with: (i) disciplinary content or substantive knowledge; (ii) disciplinary skills or syntactic knowledge; (iii) workplace awareness; and (iv) workplace experience.

The authors (p. 28) explained that ‘disciplinary content’ consists of “the facts and major concepts, and the ways these are organised into frameworks for guiding further enquiry”, whereas ‘disciplinary skills’ consists of “the procedural aspects of a discipline, including the ways in which verification and justification of new knowledge are established. These skills would thus include the heuristics, methods, plans, practices, procedures, routines, strategies, tactics, techniques and tricks of the discipline”. The two bottom domains represent ‘workplace awareness’ (i.e., attempts within university

courses to provide simulated authentic workplace settings) and ‘workplace experience’ (i.e., direct work placements and/or internships).

**Figure 4: A Model of Course Provision**



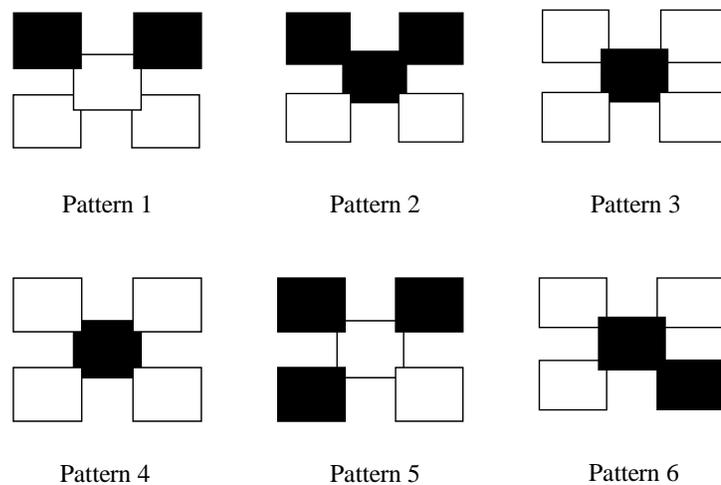
*Source:* Bennett et al. (2000, p. 28).

Bennett et al. (2000) emphasised that the inclusion of work experience and awareness in the said model (Figure 4) is underpinned by situated learning theory; that, is situations and social partnerships influence how knowledge and skills are acquired and subsequently deployed. Complementary to this notion is Vygotsky’s social development theory that emphasises the fundamental nature of social interaction to the development of one’s cognition; because human activities take place in cultural settings, our specific mental structures and processes can be traced to our interactions with others (Lave & Wenger, 1991; Woolfolk 2004). Thus, knowing and learning is a process of enculturation (Bennett et al., 2000). Research has well documented the benefits and value of work experience in enhancing the development of skills relevant to the workplace, and of increasing students’ awareness of work practices and organisational culture (Duckenfield & Stirner, 1992; Harvey et al., 1997).

Noticeably, each of the five areas in Figure 4 are represented as distinct but interdependent, emphasising a degree of interconnectedness. To illustrate the extent of such relationships, the topic of ‘generic skills’ is shown as extending into all four domains because the same skills can be taught as either core or discipline-specific and/or

as broader, employable skills and, both generic skills and disciplinary knowledge and skills can be acquired through work experience and/or workplace awareness (Bennett et al., 2000). Similarly, and in relation to disciplinary content and skills, a person cannot solely choose to acquire performance knowledge without also understanding that he/she has acquired propositional knowledge as a consequence and vice versa (Fenstermacher, 1996). Patterns of generic skills development that reflect the efforts of HE in enhancing the students' employability is shown in Figure 5 with details of teaching objectives provided in Appendix A.

**Figure 5: Patterns of Generic Skills Provision in Higher Education**



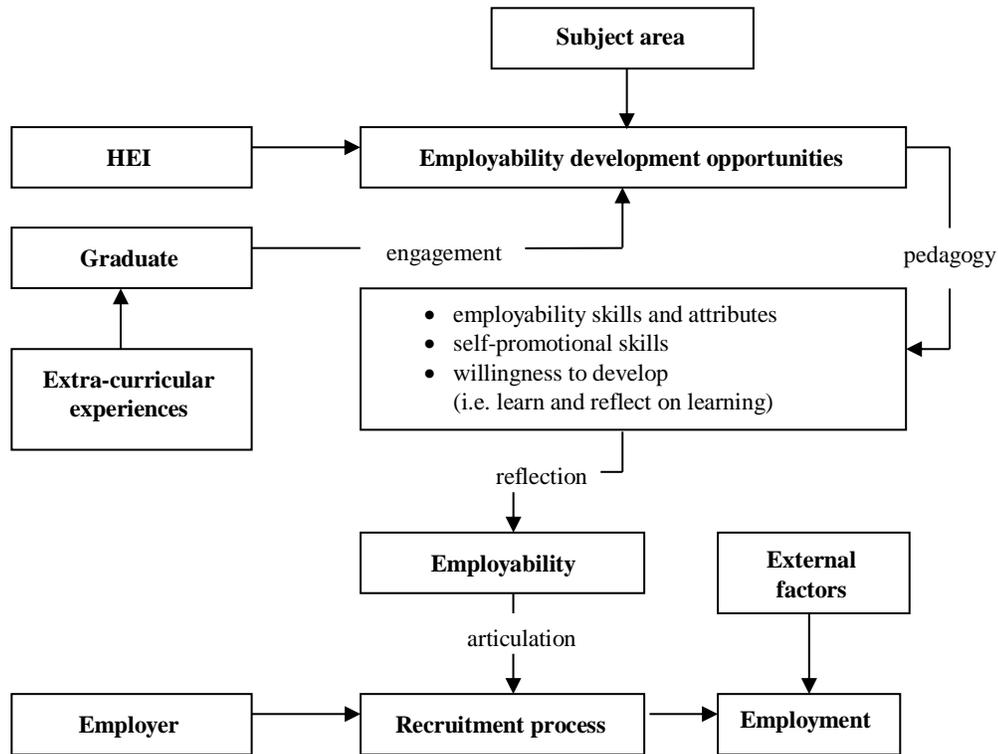
*Source:* Bennett et al. (2000, p. 51).

#### 2.1.4.1.2 Harvey, Locke, and Morey (2002).

Figure 6 over page illustrates the graduate employability development (GED) model developed by Harvey, Locke, and Morey (2002). Within this framework, the authors acknowledged that students' employability is only partially contingent on what is provided by the institution; that is, both HE and extra-curricular activities including life experiences afford students with a range of implicit and explicit employability development opportunities. In the context of HE, for example, employability development can take many forms such as sandwich courses, computer simulations,

discrete modules, work-based learning and organised work experience that may be a part of, or external to, a programme of study. Also, most universities have a careers information centre dedicated to helping students with *curriculum vitae* writing, interview techniques and so on.

**Figure 6: A Model of Graduate Employability Development**



*Source:* Adapted from Harvey et al. (2002, p. 18).

However, it was stressed by Harvey et al. (2002) that students must choose to engage actively with the opportunities provided by the institution if they are to equip themselves with the understandings and skill set that will meet their personal and professional needs. Further, in order to successfully make the transition from HE to the world of work, students must be encouraged to reflect on the significance of learning experiences so that they can recognise the relevance of the skills and attributes gained and, then, clearly articulate what they have learnt and how well-equipped they are to continue

learning (ibid.). As Brown et al. (2003, p. 120) stated: “the value of an individual to an employer is no longer represented by the denomination of academic currency but by the *economy of experience*”. Reflection and articulation, therefore, are core processes impacting on graduates’ employability by providing the critical link between thought and action.

Aside from external factors impacting on employment as shown in Figure 6 and as discussed earlier, Harvey et al. (2002) recognised that the recruitment practices of employers are a key element by which graduates can ‘kick start’ their career by getting a job in their chosen field. Indeed, recruitment is taken very seriously by employers (Purcell et al., 2002) with most organisations looking for “adaptable recruits – able and willing to learn and add to their knowledge and skills, demonstrating initiative within the pre-set framework; able and confident enough to use their knowledge and skills in the face of change; and interacting effectively to motivate teams and to communicate at a variety of levels” (Harvey, 1999, p. 16). This means that in a tight labour market and given the recent global financial crisis (GFC), competition between companies is increasingly strong for attracting the most talented graduates who are not only intelligent and well-rounded but who can also ‘hit the ground running’.

Harvey et al. (2002) highlighted that recruitment processes are not always as transparent as they appear, particularly among large organisations where the selection of new recruits continues to be skewed in favour of certain groups of graduates. Further, they indicated support from prior studies (Bennett et al., 2000; Harvey et al., 1997) whereby the selection criteria established by some human resource departments do not necessarily reflect the immediate requirements of graduates’ line managers, nor do they have the longer-term strategic views of senior management. This may be due to competency frameworks used during screening that apply broad labels such as ‘communication’, ‘teamwork’ and ‘problem-solving’ which result in a mismatch of recruits upon arrival into the organisation (Stasz, 2001). Or, it may be because “sometimes chief executive officers (CEOs) are out of touch in their public announcements with the skill sets required by their organisations and with the abilities exhibited by new graduates”

(Harvey et al., 2002, p. 18). Nevertheless, the disparity in expectations that follows may lead to graduates leaving the organisation in frustration or becoming very much corporate-led (Bennett et al., 2000).

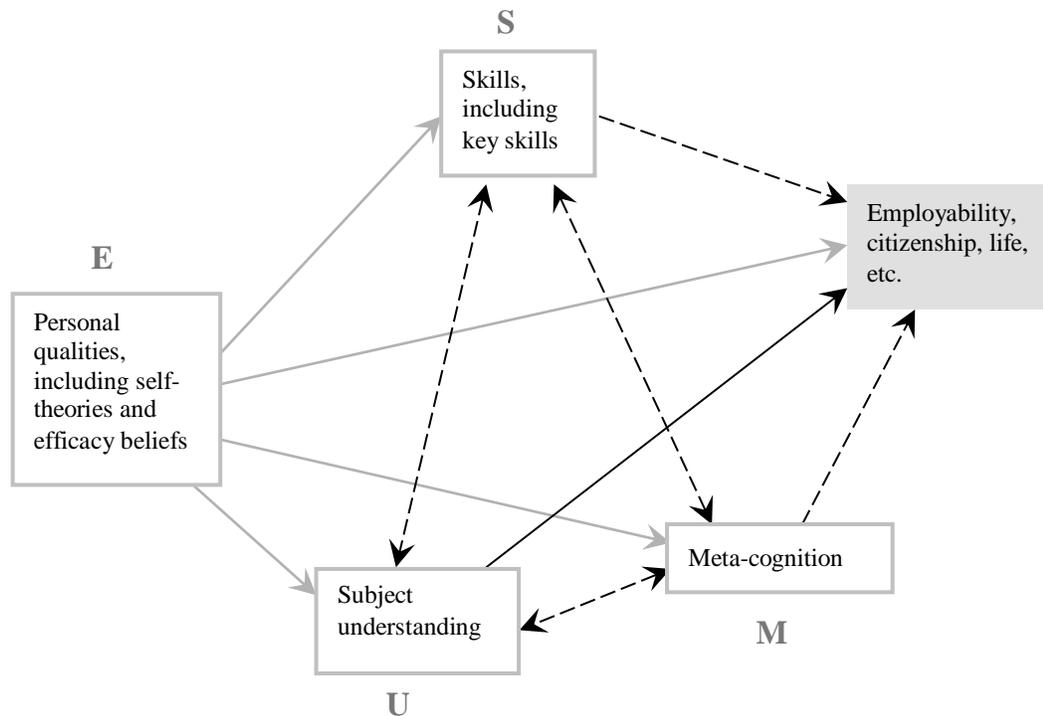
Given the reported differences in recruitment practices pertaining to skills requirements, Harvey et al. (2002) called for increased participation from employers, industry leaders, professional bodies and alumni to ensure that public debates on developing graduates' employability use informed, up-to-date and accurate labour market data both on the actual requirements of employers and on the attributes offered by graduates. Also, they suggested that in addition to embedding employability enhancement into curricula, HEIs should facilitate the linking together of the different aspects of employability more closely. At an individual level, this would require a holistic understanding of the various components impacting on employability development and an evaluation of one's overall conceptualisation of, and approaches to, teaching in HE.

#### *2.1.4.1.3 Knight and Yorke (2003).*

The USEM model developed by Knight and Yorke (2003), depicted in Figure 7, proposes that employability is influenced by four broad and interrelated components: (i) understanding; (ii) skills; (iii) efficacy beliefs; and (iv) metacognition.

The authors explained that the term 'understanding' (as opposed to discipline-specific knowledge) was used because of its implication of depth; that is, a key outcome of HE lies in the ability of its students to discern and logically demonstrate a comprehension of facts and concepts associated with a field of study. 'Skills' is meant to be interpreted as 'skilled practices', suggesting students' capacity to transform their learning into practice and use their skills appropriately in context (Down, Martin, Hager, & Bricknell, 1999; Knight & Yorke, 2003). This notion is similar to that of Harvey et al. (2002, p. 22) who stressed the importance of students knowing when to take risks and persuade people of the merit of new ideas, when to think laterally, show initiative, assume responsibility and move an organisation forward; simply put, "graduates must be able to do more than just sell themselves: they have to be able to perform in a job once they are recruited".

**Figure 7: The USEM Account of Employability, with the pervasiveness of ‘E’ highlighted**



*Source:* Knight and Yorke (2003, p. 8).

As for efficacy beliefs, Knight and Yorke (2003) highlighted that, while this aspect of educational and psychological research is seldom used in discussions of employability, the extent to which students have malleable, rather than fixed, self-theories is of critical importance to the development of their employability. Extensive research has shown that factors such as self-efficacy (or beliefs/judgements about one’s abilities), self-perceptions and self-expectations directly correlate to students’ approaches to learning, their personal commitment to pursuing learning goals and their orientation towards performance (Bandura, 1986; Entwistle 1997; Pajares & Kranzler, 1995; Prosser & Trigwell, 1999).

For example, Bandura (1986, p. 394) contended that “persons who have a strong sense of efficacy deploy their attention and effort to the demands of the situation and are spurred by obstacles to greater effort”. Further, they will persevere in those tasks until

success has been achieved as errors along the way tend to be regarded “as a natural, instructive part of the process – one learns from mistakes” (ibid., p. 476). Referred to as a *deep* approach to learning, such learners are self-regulated and goal-oriented, purposefully seeking out needed information and utilising a combination of academic learning skills and self-control to help make learning easier and to sustain their motivation to learn; in other words, these learners not only have the skill to learn but also the will to learn (Ertmer & Newby, 1996; McCombs & Marzano 1990). However, Bandura (1986) and Pajares and Kranzler (1995) strongly cautioned that, although individuals may possess high self-efficacy beliefs they must balance their accuracy of perception and harmony between these beliefs and their possession of knowledge and skills in order to ensure outcome success; a term Bandura (1986, p. 391) coined as “competent functioning”.

Conversely, students with fixed self-theories tend to view tasks as performance-oriented opportunities either to demonstrate competence or at least to avoid showing incompetence (Entwistle, 1997; Hounsell, 1997; Knight & Yorke, 2003). These learners tend to adopt a *surface* approach to learning, characterised by an unreflective or passive attempt to memorise by rote and reproduce information as required (Prosser & Trigwell, 1999). Other strategies used to meet the demands of the task may include a focus on unrelated parts of the task, separate treatment of related parts and/or a focus on what are seen as essentials (ibid.). In terms of competent functioning, Bandura (1986) highlighted that individuals with a low sense of efficacy but high skills attainment may fail to undertake tasks that they are capable of completing due to a lack of self-confidence.

Irrespective of a student’s approach to learning, however, Pajares and Kranzler (1995) emphasised that the assessment of self-efficacy beliefs must be relevant to the behaviour in question and vice versa. They asserted that individuals must accurately appraise the aims of the task at hand and the performance levels required for self-efficacy judgements to serve as useful regulators and predictors of performance. Otherwise, ambiguity can lead to inaccurate efficacy judgements which, in turn, can mislead the individual from

establishing realistic goals and determining the strategies necessary for successful completion of the task (ibid.).

The last component influencing employability as shown in Figure 7 is metacognition which, according to Knight and Yorke (2003), can be seen as subsuming elements of: (i) understanding one's own cognitive processes; (ii) of reflection in, on and for practice; and (iii) a capacity for self-regulation. They, like others (Harvey et al., 2002; Williamson, 1997), stressed that a pedagogy for enhancing employability which encourages the development of metacognition is significant for encouraging students to evaluate their achievements with respect to the expectations of employers and society at large. Moreover, such an approach can assist students in becoming 'expert learners' and empower them for lifelong learning in turbulent and rapidly changing labour markets. As Atkins (1999, p. 269) stated, "becoming self-reflective as a professional practitioner is now a normal requirement".

To summarise, Knight and Yorke (2003) suggested that the USEM model (Figure 7) provides a 'scientific' approach to thinking about employability development within HE by referring to research evidence and theory, as opposed to the familiar view that 'employability = skills'. Of central importance to their framework are students' beliefs about themselves (self-efficacy) and their ability to make a difference because, if both learners and teachers believe that many of the personal qualities and attributes which employers value are given to fixed self-theories, HE has a limited affect on enhancing students' employability. Therefore, changing attitudes and practice are fundamental to employability development; an argument presented by Knight and Yorke (2003) and by Bennett et al. (2000, p. 168) who stated that "no lasting curriculum change is possible without a prior change in teachers' behaviours, attitudes and beliefs".

#### **2.1.4.2 Conclusions on graduate employability development models.**

Of the models discussed, two dominant themes pervade: *firstly*, teaching approaches that promote active student engagement are central to meaningful learning; and *secondly*, meaningful learning correlates highly with developing employability. An implication is

that university programmes will incorporate a variety of learning and teaching approaches to develop graduates who are both attuned to the need for, and equipped with, key generic skills and other outcomes of HE that employers value in applicants and are considered as essential for effective participation in a wide range of social settings, including adult life in general (DEST, 2002; Candy, Crebert, & O’Leary, 1994; Knight & Yorke, 2004; Washer, 2007).

Thus, educators and student support services must make plain to their students the parallels between academic and workplace tasks so that they can understand and fully appreciate the connection. According to Pool and Sewell (2007), it is essential that graduates receive some education in career development learning in order for them to stand the best chance of securing an occupation in which they can be satisfied and successful. Also, providing students with the opportunities and support to reflect on and document their achievements throughout their programme of study is important. A full discussion of the crucial role of reflection in the context of employability is presented by Moon (2004). A further dimension is the wider life experiences that many students bring with them into HE, as these experiences are potential assets as far as employability is concerned (Bennett et al., 2000; Harvey et al., 2002). Indeed, “people do not enter the education system or labour market *tabula rasa*, like empty vessels” (Brown & Hesketh, 2004, p. 37). Hence, there is a need for pedagogical practices to take this facet of employability into account when integrating ‘real’ world experiences into the curriculum.

The dual mandate of encouraging and enabling has significant implications for graduates due to employability development involving more than just one-way communication from faculty members to students. This becomes particularly relevant once the infrastructure and supervision of lecturers and tutors is no longer available (Candy et al., 1994). Purcell, Morley, and Rowley (2002, p. 36) discussed, for example, research findings that highlighted employers’ disappointment with students’ general lack of preparedness when they did show up at campus careers fairs and for the actual job interview: “one of the most cited complaints was that too often, students seemed to have

no idea what they actually wanted to do. They merely applied for any job without an appreciation of its demands or any idea of how they would contribute”. Also, while many employers indicated that they would be glad to recognise achievements such as bringing up a family or undertaking part-time work during study or overcoming difficult obstacles to get into HE, many candidates failed to exploit this type of experience when applying for jobs or responding to interview questions (ibid.).

Thus, there is a clear onus on graduates to target and market themselves to prospective employers with a clarity of purpose, a clear idea of their strengths and weaknesses and an awareness of how they can further ‘add value’ to an organisation if they wish to be considered as an impressive contender for the offered position that can meet their career goals (Brown et al., 2003; Harvey et al., 2002; Purcell et al., 2002). As Knight and Yorke (2004, p. 15) aptly stated: “unless students can translate their achievements into a language that resonates with employers, then their intellectual, social and cultural capital may be unrealised”. Therefore, students need to actively take command of the resources and support afforded to them and be willing to reflect critically on how their learning experiences and wider life achievements can lead to strong claims of employability (Harvey et al., 2002)—they need to be ‘knowing students’ who understand the rules of the game rather than of the game in general if they are to secure employment and progress in their chosen occupations (Knight & Yorke, 2004).

Beyond this, and with respect to employers supporting the employability development of graduates, they must be attuned to what HE can reasonably supply in terms of ‘work-ready’ graduates and to their own role in enhancing or sustaining the skills which they value in employment settings (Harvey et al., 2002; Yorke, 2006); recognising that newly recruited graduates will need to be socialised or enculturated into the particular company/organisation to perform accordingly (Bennett et al., 2000; Lave & Wenger, 1991).

## **2.2 Part One – Summary**

Increasingly, governments worldwide expect an educated and skilled citizenry that can contribute to economic growth in a progressively global economy. National policies and commissioned reports emphasising economic success call to link HE more closely with workforce development (OECD, 2008). Significantly, in Australia the quality of teaching and the integration and development of key generic or employability skills that prepare graduates for both employment (across various business and industry sectors) and further learning are strongly reflected in the Terms of Reference for Australia's Review of HE (DEEWR, 2008), as well as in the recommendations from the Business Industry and Higher Education Collaboration Council (BIHECC) to the Federal Minister.

Employers and business community leaders are also 'getting into' the education business (Hughes, 2002). Whether responding to customer needs, competitors, rapidly changing technology or having to 'do more with less', the organisational imperatives are clear—adaptability, flexibility, innovation and increased productivity are critical (ACCI, 2002; Kozlowski & Ilgen, 2006). Accordingly, employers want employees with well-developed generic skills, relevant knowledge and understanding and, in addition to this, they are looking for recruits who are intelligent, conscientious, quick to learn, have a willingness to continue learning and are able to work on a range of tasks simultaneously (Harvey, 2005; Hughes, 2002; Pool & Sewell, 2007). Such requirements have become increasingly important both for employers who want a workforce that can deal with change and thrive on it, and for graduates who in many areas of work cannot expect a job for life and hence have to be responsive to opportunities where they can develop their intellectual, cultural and social assets (Brown et al., 2003; Yorke & Harvey, 2005).

However, there has been some concern over promoting the HE-employability interface. For instance, not all graduates receive a tangible return on their investment in undergraduate or postgraduate education as many occupy immediate, short-term lower-level jobs to enable them to deal with various personal and financial pressures (Brown &

Hesketh, 2004; Tomlinson, 2007). In addition, various studies (Connor, 1999; GCA, 2007; Harvey & Blackwell, 1999; Smetherham, 2004) have found that recruitment and progression in employment continues to be dogged by bias and inequitable treatment, particularly in relation to gender and mature-age graduates. Harvey (2005) stressed that students need to be appreciative of this, especially those most likely to find themselves at a disadvantage in the labour market. There is also the view expressed by Knight and Yorke (2004, p. 23) that if “employers talk the language of high-profit, high-skills enterprises but run low-skills, low-profit ones, then we should be careful with employer views of what the economy needs”.

Research has shown that Australian institutions of HE have been active in responding to the employability agenda (Fallows & Steven, 2000; Patterson & Bell, 2001), despite an “unresolved debate [among academics] about the purpose of university education” (Hager et al., 2002, p. 3). There are four broad areas of activity that Australian universities are engaged in to help develop students’ employability. These include: (i) integrated approaches across various universities has meant that opportunities for developing students’ teamwork skills, for example, are explicitly embedded in the curricula rather than as ‘stand-alone’ or ‘bolt-on’ modules; (ii) enhanced or revised central support (e.g., career services) for both undergraduates and graduates in their search for work; (iii) the integration of work experience within, or external to, some programmes of study; and (iv) enabled reflection on and recording of learning experiences, skills, and attribute development, and achievement alongside academic abilities, viz., progress files, career management programmes, personal development planning and portfolio-based approaches (Bennett et al., 2000; Harvey, 2005; Pool & Sewell, 2007).

HE curricula aimed at enhancing employability must give consideration also to students’ beliefs about motivation and self-efficacy (Knight & Yorke, 2003; Pool & Sewell, 2007; Woolfolk, 2004). It is against this backdrop of educational psychology that one can appreciate the complex development and processes of learning, which cannot be attributed to just one theoretical framework. To this end, Włodkowski (2004) contended

that the basic motivation for adults is their own expectation of successfully mastering and applying learning tasks that will make them more effective at what they value; meaning that, the learning activity must display relevance or merit if it is to sustain a learner's genuine interest and involvement throughout. Logically, then, there is a need for academics to be aware of adopting teaching strategies that can best engage and instruct their students in the development, attainment and use of skills and understandings.

Linked to motivation are theories of self-efficacy. For example, Bandura (1998) contended that of all beliefs, self-efficacy is the most influential arbiter in human agency and plays a significant role in determining the choices people make, their level of effort and persevere in the face of challenge and the degree of anxiety or confidence they will bring to the task at hand. Simply put, there is a strong correlation between self-efficacy and behaviour. If students previously have experienced success in learning then their beliefs about their capabilities will correspondingly rise and provide further motivation to attempt more difficult learning tasks in the future (Bandura 1986; Entwistle 1997; Pajares & Kranzler 1995). Yorke and Harvey (2005) noted that the developmental needs of mature students may lie more in developing self-confidence in the academic sphere than in relating to the broader 'real' world.

In essence, the development of employability is an enabling process used with a view to empowering an individual; emphasis is less on 'employ' and more on 'ability' (Harvey, 2005). The alignment of HE performance with workforce needs should be based on careful action by universities to embed skills, attributes and other graduate outcomes within instructional programmes (Yorke & Harvey, 2005). The responsibility for ensuring that graduates become lifelong learners who can enter and successfully compete in the job market rests with all stakeholders; namely, government, employers, HE and students themselves. Further, there is the acknowledgement that converting employability into employment is affected by external factors such as the buoyant laws of supply and demand of jobs within the labour market.

Having reviewed literature aimed at the importance of boosting national economic wealth and the role that HE plays in this relationship, following is a review of literature relevant to supporting the employability agenda through the integration of collaborative learning activities across the curricula to promote students' active engagement in the learning process and the development of teamwork skills required for success in professional employment upon graduation.

## **2.3 Part Two – Fostering the Skilful Practice of Teamwork and Promoting Team Effectiveness in Higher Education**

### **2.3.1 Introduction**

Each year, tens of thousands of Australians make a brief but significant appearance on the stage. Dressed in period costume, and usually restricted to a walk-on role, they get to shake hands with a person splendidly attired in medieval regalia, and leave again clutching a rolled certificate.

For some, this ceremony embodies the intangible links between the modern university and its ancient predecessors; for others, it represents the essentially anachronistic trappings of an out-of-date institution. For all, it marks an important accomplishment, the realisation of a dream, the fulfilment of an ambition, the recognition of an achievement. For a brief instant, the new graduates can pause and revel in their attainment before turning towards whatever the future might hold for them. None knows for certain what that future will be: the only thing they can be sure of is that their learning—far from being over—is really only just beginning (Candy et al., 1994, p. 15).

Arguably, these words eloquently capture the concept that learning is a lifelong process that is as much a normal human activity as is breathing. It also highlights that, although the world of work into which graduates emerge may be largely unknown, university administrators and educators share a directive role in the assurance of learning; degree programmes should prepare students to enter and sustain professional careers and to contribute positively to society at large (AACSB, 2010). That is, universities have an obligation to demonstrate constructive alignment (Biggs, 2003) of their programme learning goal with students' success at achieving these goals that “reflect broad

educational expectations ... [and] reflect those skills and knowledge areas that are most valued” (AACSB, 2007, p. 4).

In recent years, the pervasive spread of ‘convergent technologies’ (Candy, 2000) and a variety of unfolding global forces has pushed organisations worldwide to restructure work around teams so as to enable more rapid, flexible and adaptive responses to the unexpected (Kozlowski & Ilgen, 2006). Empirical research corroborates the increasing use of teams to manage and perform complex tasks in private and public organisations (Edmondson, Bohmer, & Pisano, 2001; Fernandez, Kozlowski, Shapiro, & Salas, 2008; Janssens & Brett, 2006), in industrial (Attaran & Nguyen, 1999; Druckman & Bjork, 1994) and in military (Cannon-Bowers & Salas, 1995; Kozlowski & Ilgen, 2006) sectors of the workplace.

For example, Gordon (1992) indicated that 82% of companies with 100 or more employees utilise self-directed/managed work teams. A similar figure based on findings from a survey conducted with Fortune-100 companies was reported by Chen, Donahue, and Klimoski (2004). Likewise, PepsiCo (a market leader in the snack food industry) directly attributes its business and financial success to motivated professionals working in teams to solve problems creatively (PepsiCo, 2008). Therefore, it is argued that the popularity of teams throughout organisations is unlikely to diminish as many businesses and firms rely upon successful collaboration and coordination in order to achieve their goals and to meet the needs of clients. Also, many authors agree that the implementation of teams is one of the most common changes in work settings such that teams are now the primary building block in most organisations (Baker et al., 1999; Devine 2002). As Baskin, Barker, and Woods (2005, p. 20) stated: “the rationale for ‘cooperative interaction’ is simple: as organisations continue to decentralise decision-making and to deal with today’s complex and changing environment, there is greater reliance on workplace teams to carry the load”. Therefore, enhancing graduates’ ability to collaborative effectively is an important goal for educators.

Business schools have responded to demands from business, industry, professional and accrediting bodies to produce graduates with well-developed teamwork skills. Many academics have worked diligently to integrate experiential and collaborative learning activities across the curriculum to promote students' active engagement in the learning process (Ackerman, Gross, & Perner, 2003; Hernandez, 2002). Whereas traditional instructional methods for organising class activities were associated largely with competition (i.e., negative interdependence) or individualistic effort (Johnson et al., 1998; Strom, Strom, & Moore, 1999), many instructors now advocate collaborative learning as an effective and preferred approach to teaching and learning (Felder, Woods, Stice, & Rugarcia; 2000; Johnson et al., 2007).

Typically, collaborative learning describes learning environments with somewhat unstructured tasks in which students cooperatively work together in small groups toward the authentic achievement of a common goal (Cohen, 1994; Prince, 2004; Slavin, 1988). It involves an element of accountability for sharing authority and responsibility among peers for the actions of the group and for the final product (Slavin, 1995). The collaborative learning tradition embraces the view that knowledge is a social construct involving joint intellectual efforts by students or, students and teachers together (Bacon, 2005; Vygotsky, 1978). In turn, this requires that the instructor's primary role shift from being the transmitter of facts and information to be learned to one who designs and facilitates intellectual experiences for students (Michaelsen, 2002). Further, instead of being distant observers of questions and answers or problems and solutions, students are required to accept responsibility for the initial exposure to the course content so that they can become immediate practitioners for in-class team activities (Smith & MacGregor, 1992).

In addition, research has recognised the positive potential of simulation activities as a means of providing students with hands-on business experience as a tool for integrating knowledge and skills acquired throughout undergraduate studies (Doyle & Brown, 2000; Wolfe & Fritsche, 1998). Young (2005), supported by the work of Bandura (1997), highlighted the view that actively engaging students both experientially and cognitively

has the potential to stimulate the development of self-regulated learning, which not only contributes to success in formal education but also promotes lifelong learning.

### **2.3.2 The Value of Student Team-Based Projects**

Henke (1985) emphasised that for students to appreciate the challenges and complexities of decision-making for task completion in the 'real' business world, they must be provided with opportunities to engage in realistic team-based experiences in the classroom. He maintained that the net result of students involved in team projects goes beyond what they would obtain if working by themselves. That is, team projects can be more complex and ambiguous in scope by comparison with individual projects, thereby increasing students' knowledge-base, business awareness and understanding of the division of labour in completing a large project (Romme, 2003). However, Skilton, Forsyth, and White (2008) cautioned that when projects are too complex and abstract many students simply lack the technical competence that is required for success.

In addition to preparing graduates for professional life by helping them learn how to work well with others, team project advantages for students include persistence in working towards goal accomplishment despite difficulties (Johnson et al., 2007), greater willingness to take on difficult tasks (Pfaff & Huddleston, 2003), greater inclination to explore their own styles of interaction with others to discover own strengths and weaknesses when working collaboratively (Lancellotti & Boyd, 2008), increased interracial and multicultural acceptance (Cohen, 1994), enhanced sense of belonging (Strom et al., 1999) and self-awareness (Major, 2005), increased interest and intrinsic motivation for learning (Johnson et al., 2007; Nichols & Miller, 1994) and improved democratic skills and adoption of civic values that underlie effective citizenship and social responsibility (Fertig, 1995; McCorkle et al., 1999). Student team-based projects also facilitate the development of problem-solving, communication, interpersonal, negotiation, leadership, time-management and higher-order thinking skills (Butcher, Stefani, & Tario, 1995; Johnson et al., 2007; Paladino, 2008).

Furthermore, studies have highlighted that student projects can convey certain benefits to instructors. For example, the use of student projects may enhance the productivity of instructors by reducing their volume of grading (Williams, Beard, & Rymer, 1991). Also, instructors potentially can have more meaningful contact/interaction with their students if they meet with student teams rather than trying to meet with hundreds of individual students (Aggarwal & O'Brien, 2008). Pfaff and Huddleston (2003) indicated that not only is meeting with groups more time effective, it can make some students feel more comfortable and open to conversation as opposed to one-on-one interaction where the instructor may dominate a discussion.

Nevertheless, not all of the support for collaborative learning is compelling. Indeed, King and Behnke (2005, p. 58) stressed that “it should not be assumed that such positive outcomes are inherent in group assignments”. For example, several researchers found no significant difference in academic performance between students who worked alone compared to when they worked as a member of a team (Bacon, 2005; Kunkel & Shaffer, 1997; Lancaster & Strand, 2001). Also, while many students may get plenty of experience working in teams as part of the unit/course requirements, it is incorrect to assume that simply putting individuals together will result in successful team performance (Salas, Burke, & Cannon-Bowers, 2000; Vik, 2001). Slavin (1988) himself admitted that not all students enjoy or benefit from working in teams; consequently, many teams do not realise their full potential due to problems that arise during team processes.

### **2.3.3 Common Drawbacks Associated with Student Teams**

Whenever students come together to work as a team there are potential risks for each individual student involved. The problems or drawbacks associated with student projects have been widely documented empirically and anecdotally. Several major problems identified in the literature are summarised briefly below.

### **2.3.3.1 Lack of trust due to social loafing and free-riding.**

The problem of social loafing and free-riding by individuals has been the primary complaint among students as to why they dislike team projects (Aggarwal & O'Brien, 2008). Social loafers or free-riders, through an unwillingness to participate equally to the team effort, take advantage of their team members by forcing them to pick up the slack with the expectation of reaping the same benefits or rewards as their peers who actually did the work (Barr, Dixon, & Gassenheimer, 2005; Dommeyer, 2007; Huff, Cooper, & Jones, 2002). Not only does this cause resentment among the more productive students (McCorkle et al., 1999) but trust in one's team members often becomes damaged (Huff et al., 2002), thereby affecting the dynamics of the entire team.

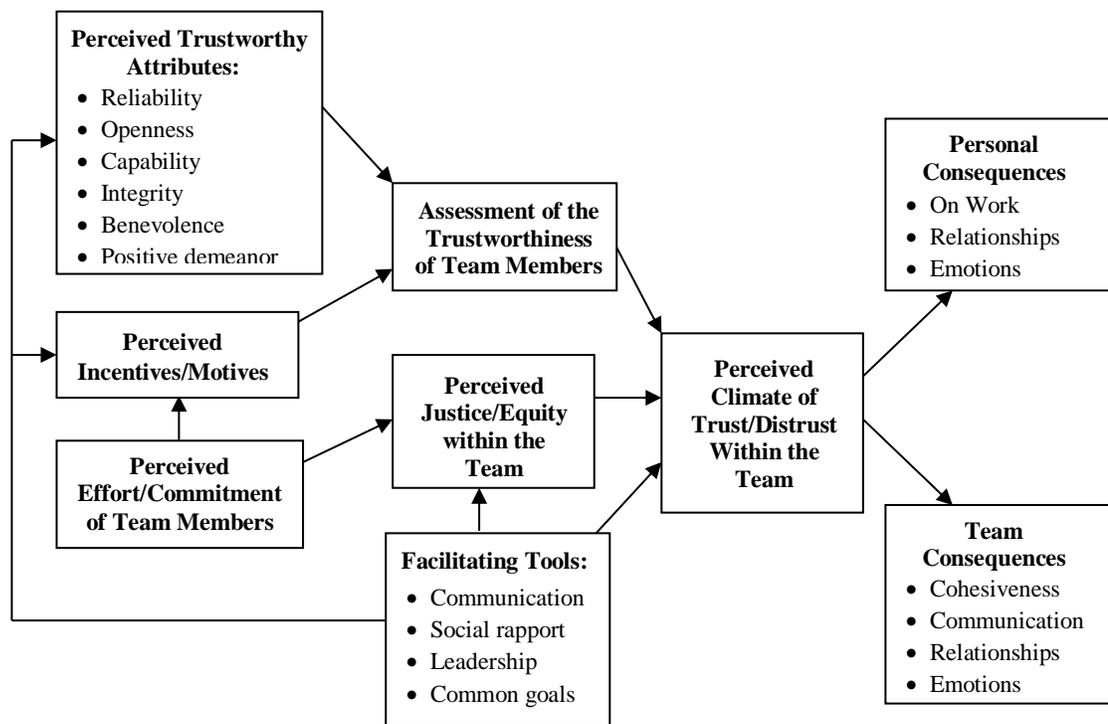
Typifying teams where the level of trust is high, members are more likely to share and/or support each other's ideas, feelings, opinions and information than in team situations where trust is low, wherein members are more likely to be 'guarded', evasive, unreliable and inconsiderate in their communications (Johnson & Johnson, 1975; Yeatts & Hyten, 1998). As Larson and LaFasto (1989) explained, a climate of trust fosters teamwork because it allows team members to stay focused on doing the work, promotes efficient communication and coordination, enables members to compensate for each other should one member falter and allows for the consideration of alternative points of view during the decision-making process. A climate of trust also leads to satisfying relationships or team camaraderie, as well as positive attitudes and emotions (Huff et al., 2002).

However, the extent to which trust decreases may depend on the attributions that members make for social loafing or free-riding (Barr et al., 2005; Huff et al., 2002). For example, both Comer (1995) and Kerr (1983) found that teammates' trust was less affected when students perceived they were teamed with less talented or competent members than when colleagues could have contributed but chose otherwise. Similarly, in a qualitative study conducted by Huff, Cooper, and Jones (2002) involving undergraduate business students, nearly two-thirds of the students cited a lack of effort or commitment as the primary reason for not trusting one another. Other trustworthy

attributes that were identified by the students include: (i) reliability/consistency; (ii) openness; (iii) capability; (iv) integrity; (v) benevolence; and (vi) positive demeanor. These dimensions of trust are consistent with those presented in the discipline literature (Lindquist, 1997; McKnight, Cummings, & Chervany, 1998; Yeatts & Hyten, 1998). A model of the determinants and consequences of trust in student teams as developed by Huff et al. (2002) is presented in Figure 8.

As discussed by Purser, Pasmore, and Tenkasi (1992), it is worth noting that problems associated with social loafing and free-riding also are common causes of managerial intervention and project failures in ‘real’ life.

**Figure 8: A Model of Determinants and Consequences of Trust in Student Teams**



*Source:* Adapted from Huff et al. (2002, p. 30).

### **2.3.3.2 Transaction costs.**

Besides *direct costs* in terms of time and energy sustained by individuals in completing a team project, Yamane (1996) discussed *transaction costs* that students incur from working on a team assignment. These costs, resulting from the interaction and collaboration with team members include time lost due to negotiating the particulars of the project, inefficiencies in coordinating efforts and travelling to and from meetings (McCorkle et al., 1999; Yamane, 1996). Research undertaken by St Clair & Tschirhart (2002) revealed that students also experience *emotional costs* by expressing feelings of being ‘disconnected’ from their team members because of inability to meet regularly outside of class time due to conflicting schedules and other commitments.

St Clair and Tschirhart (2002) noted that if meeting times cannot be found to accommodate all members’ schedules then the team may split into autonomous subgroups or individual workers. As a result, the effectiveness of the team will be reduced when subgroups are formed on the compatibility of schedules rather than on the basis of skills and interests. This means that, even if the team decides how to ‘best’ divide the work, the chance of students submitting a coherent final project will be low as they rarely take the time, or have the skill, to recompose the work once it has been accomplished (Skilton et al., 2008; St Clair & Tschirhart, 2002). A further consequence of dividing the labour is that “students only learn a fraction of what the instructor intended them to learn due to their lack of exposure to the efforts and findings of their supposed collaborators” (McCorkle et al., 1999, p. 108).

### **2.3.3.3 Attitudes, intentions and skills-related problems.**

The proposition that attitudes motivate behaviours and influence various stages of information processing by means of attention, perception and retrieval has been the focus of extensive theoretical and empirical development for several decades (Ajzen & Fishbein, 1980; Allen, Machleit, & Kleine, 1992; Allport, 1935; Curran & Rosen, 2006). For instance, a central tenet of the human-relations theory of management is that positive attitudes toward a task lead to more effective performance (Glazer, Steckel, &

Winer, 1987; Likert, 1961). It also underlies the organisational behaviour literature relating to job satisfaction and performance (Katz & Kahn, 1978). Indeed, “because of the importance accorded to attitudes as causes of individual phenomena such as attitude-consistent behaviour and selection perception as well as of social phenomena such as social conflict and discrimination, the concept of *attitude* has become a fundamental construct for most social scientists” (Eagly & Chaiken, 1993, p. 1).

In terms of education, the attitude or tendency (Eagly & Chaiken, 1993) of a student can play a critical role in learning and in the quality of learning outcomes (Curran & Rosen, 2006; Glazer et al., 1987; Gregore & Butler, 1984); largely, the meanings and understandings which individuals assign to entities in their world are measured or expressed in terms of evaluative responses with some degree of favour or disfavour, approach or avoidance, attraction or aversion and so on (Eagly & Chaiken, 1993; Osgood, Suci, & Tannenbaum, 1975). Accordingly, a student who has a negative attitude towards a particular instructional or pedagogical approach may experience feelings of anxiety, frustration, insecurity or alienation (Gregore & Butler, 1984) which could lead to withdrawal, covertly and even overtly, from the learning experience.

Research regarding the relevance of attitudes has found, in part, that the negative attitudes and emotions harboured by “a significant number of students” towards team projects (Pfaff & Huddleston, 2003, p. 38) are due to the need to tutor less competent team members who have not acquired such skills as communication, negotiation, leadership and relationship management (Cowie, Smith, Boulton, & Laver, 1994; King & Behnke, 2005). Particularly troublesome is students’ lack of conflict resolution skills needed to manage intragroup conflict. For example, some students experience real trepidation about approaching their peers with attempts to persuade them to modify their behaviour for the benefit of the team (Bolton, 1999; Lancellotti & Boyd, 2008). There is also the fear that if they exhort their peers to increase performance then reprisal could be directed toward their overall mark in the team project; viz., peer evaluation (Lerner, 1995). Lembke and Wilson (1998, p. 927), when discussing team membership and participation from the social identity perspective, asserted that “highly productive

teamwork requires that members recognise the team as a unit and as an attractive work arrangement”. Following this line of reasoning, the potential of a team depends not only on the combined skills and efforts of its members but also on the alignment of cognitive and emotional processes.

Sorensen (1981) used the term *group-hate* to refer to the negative attitudes that students have towards teamwork and postulated that when individuals have a bad team experience they are more likely to dislike having to work in teams in the future. This view is supported also by Dyer (1995). Huntington (2005, p. 31) stressed that “educators need to be cognisant of this and ensure that interactive experiences are respectful, life affirming encounters that are unlikely to result in harm to participants (physical, emotional or psychological)”.

#### **2.3.3.4 Individual learning style differences.**

Individual learning styles have long been a basis for understanding students’ preferences for various learning activities (Amato & Amato, 2005; Karns, 2006; Kolb, 1984; Prosser & Trigwell; 1999). The rationale for identifying learning styles is that the ‘one size fits all’ teaching approach is inherently exclusionary and inhibitory to effective learning (Morrison, Sweeney, & Heffernan, 2003). Learning style, recognised by observing a student’s overt behaviour, has cognitive, affective and physiological elements that serve as relatively stable indicators of *how* a learner perceives, interacts with and responds to the learning environment (Keefe, 1985). Namely, it is an individual’s preferred way to go about learning—how they best take in and process information (Felder, 1996).

With respect to team projects, it has been found that team performance is significantly and negatively influenced by students who have a strong predilection to working alone (Barr et al., 2005; Blanchard, Bowles, Carew, & Parisi-Carew, 2001; Griffeth, Gaertner, & Sager, 1999). Even though these students are very task-oriented and committed to their work, often they are referred to as ‘lone wolves’ because they lack the patience to work with others, spend little time developing interpersonal interactions necessary for teaming, perceive others as less capable and dismiss ideas with a degree of superiority

(Barr et al., 2005). By all accounts, then, students who prefer independent learning do not make for good team players as individualistic tendencies such as those listed present formidable challenges to successful teaming.

Therefore, understanding the students' preferred style of learning and adapting teaching methods can have significant educational benefits for both teachers and learners (Boles, Pillay, & Raj, 1999; Morrison et al., 2003). On the other hand, "if professors teach exclusively in their students' preferred modes, the students may not develop the mental dexterity they need to reach their potential for achievement in school and as professionals" (Felder, 1996, p. 18). Thus, the objective of education should be to design and deliver learning activities drawing on multiple modalities that will help students become well rounded by developing their skill set in all styles of learning (Felder, 1996; Karns, 2006).

#### **2.3.3.5 Other problems.**

Anderson (2005) identified additional problems affecting team performance by surveying a sample of 172 business students engaged in a team-based experiential learning activity at the undergraduate level. The problems (without duplicating similar items discussed above) include team heterogeneity, the inability to think and act opportunistically and the incapacity to grasp hypothesis-driven thinking; it was noted that a student's prior computer experience and the ability to use technology also may be possible antecedents to a positive team experience.

The extant empirical literature focusing on team size and effectiveness suggests that students in larger teams tend to be less satisfied with, and committed to, the success of their teams (Cossé, Ashworth, & Weisenberger, 1999; Salas, Rozell, Mullen, & Driskell, 1999). This may be due to a greater outlay of time and effort being required to develop team cohesiveness (Birmingham & McCord, 2002; Wolfe & Box, 1988) which is a requisite for effective team processes and performance (Hackman, 1987; Larson & LaFasto, 1989). Hence, researchers contend that "small team size is best as long as there are more than two members" (Pfaff & Huddleston, 2003, p. 39) and that sizes of three or

four work better for student tasks (Rollier, 1992; Wolfe & Chacko, 1983), whereas others suggest having five to seven members (Birmingham & McCord, 2002; Yetton & Bottger, 1983).

With respect to team heterogeneity-diversity, research has confirmed that culturally diverse teams suffer from a number of problems, including: (i) process losses arising from a lack of cohesion and the inability of some members to communicate in the team's dominant language; (ii) frequent disagreements on expectations and goals; (iii) conflicting decision-making norms; and (iv) attitudinal problems related to hierarchical cultures and feelings of dislike and mistrust (Adler, 1997; Brett, Behfar, & Kern, 2006; Steiner, 1972). Based on their findings, Bacon, Stewart, and Stewart-Belle (1998) suggested that students' self-selection of teams would be advantageous because the team grade may reflect an individual's ability more closely as students tend to choose peers who are close to their own ability; they recommended that each team should contain at least  $n$  international students.

In contrast, Siciliano (2001) argued that students' self-selection of teammates historically has been found to be less effective than when the instructor determines groupings. Baker and Campbell (2005) and others (Cooper et al., 1990) argued that instructors, not students, should decide the membership of each team so as to ensure that both ability and self-efficacy are represented, in addition to diversity. Feichtner and Davis (1984, p. 68) revealed from their survey data that if students were given responsibility for forming their teams they were more likely to judge the team as being their worst team experience; perhaps this can be explained in terms of the misattribution of shared understandings among homogeneous individuals as from the actual shared understandings or, "one of the most crucial reasons is that, overall, they [students] are very likely to blame the group's problems on the attitude or lack of competence of the instructor".

### **2.3.4 Conclusions on the Use of Student Teams in Undergraduate Education**

In summary, if instructors are using team-based projects as a pedagogical tool to develop students' teamwork skills then it is imperative that they remove the legitimate causes for criticism and increase both students' commitment to teamwork and their ability to function successfully in team situations. This means that, technically, educators must be competent in their understanding of what conditions influence teamwork and team effectiveness, particularly given that teachers have a degree of control over many of the variables that affect the extent to which a collaborative activity is successful. As such, a critical component of the current research is to make advancements toward establishing students' perceptions of what variables of the learning environment reliably influence their teamworking ability development and overall satisfaction with the team experience so that educators may better design and guide the process.

However, before individuals can be transformed into effective team members, there is a need for specific explanations or descriptions of the key features that uniquely define a team and the nature of teamwork and team effectiveness from a conceptual perspective (Paris, Salas, & Cannon-Bowers, 2000). Thus, in the following section attention is given to clarifying and elaborating these separate yet interrelated constructs that are applied throughout the current research.

### **2.3.5 The Discipline of Teamwork**

#### **2.3.5.1 Teams.**

It is quite plausible that the plethora of perspectives advanced to define the term *team* in extant literature, in part, may be due to the fact that teams serve a variety of purposes and exist in various forms, sizes and longevity. Also, the way in which skills and attitudes are manifested within a team is likely to be affected by culture (Brett et al., 2006; Earley & Mosakowski, 2000); described simply as the collection of values, beliefs, behaviour and material objects that constitute a people's way of life (Macionis, 2003). Further complicating the matter, Triandis (2006, p. 21) noted that "within culture

there are individuals who are idiocentric (think, feel, and behave similar to people in individualist cultures) as well as individuals who are allocentric (similar to people in collectivist cultures)”; the assertion being that although culture does provide clues about the predictability or probable mean position of a sample of individuals which make universal generalisations possible, it does not fully explain individual variances of behaviour.

At any rate, “a clear definition of a team is essential because it provides measurement boundaries and clearly distinguishes teams from small groups, which do not necessarily connote interdependence” (Baker et al., 1999, p. 4). Moreover, a definition outlining the core characteristics of a team provides insight into the nature of teamwork and its key facets (Cannon-Bowers & Salas, 1997).

Therefore, for the purpose of the current research and as summarised by Kozlowski and Ilgen (2006, pp. 78-79) a team is defined as two or more individuals who: (i) socially interact (either face-to-face or virtually); (ii) possess distributed team competencies; (iii) define and accept one or more common goals; (iv) coordinate and cooperatively work together to perform relevant tasks; (v) exhibit positive interdependencies to achieve shared workflow, goals and outcomes; (vi) have different roles and responsibilities; (vii) are together embedded in larger systematic contexts of people, tasks, technologies, and settings; and (viii) have a limited life-span to produce an effectual synchronised outcome. An additional characteristic is that a team is identified as such by those within and outside the team (West, Borrill, & Unsworth, 1998). Specifically, a team has its own identity; viz., the extent to which individuals desire membership in (vs. association with) the team and what it represents so as to make the successful attainment of shared goals more likely (Lembke & Wilson, 1998; Turner, 1987). Also, team researchers have converged on a view which recognises that a team is not a static entity but, instead, is an adaptive and dynamic system that develops as members interact over time and contexts, and as situational demands unfold (Ilgen, Hollenbeck, Johnson, & Jundt, 2005; McGrath, Arrow, & Berdahl, 2000; Tannenbaum, Beard, & Salas, 1992).

### 2.3.5.2 Teamwork.

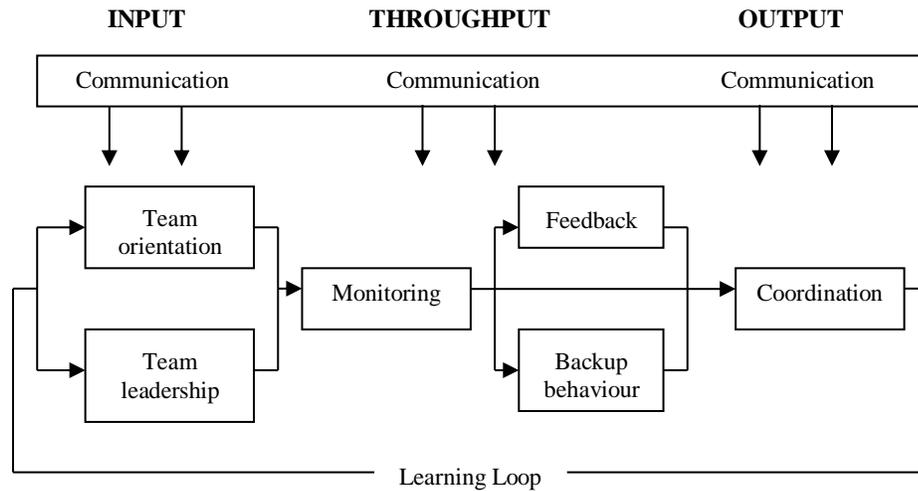
Essentially, *teamwork* can be defined as a set of flexible, interdependent behaviours, actions and feelings that combine to facilitate coordinated, adaptive performance strategies for the completion of taskwork objectives and collective goals (Marks, Mathieu, & Zaccaro, 2001; Salas, Stagl, Burke, & Goodwin, 2007). This definition makes reference to a number of enacted processes for goal accomplishment and a set of knowledge, skills, attitudes and other characteristics (KSAOs) central to these processes. However, the question remains as to what core processes constitute teamwork? To address this question and foster a shared conceptualisation of the dynamic nature of teamwork, as relevant to the current study, the research of Dickinson and McIntyre (1997) and Salas et al. (2005) are described below.

#### 2.3.5.2.1 Dickinson and McIntyre (1997).

Although over 14 years old the model proposed by Dickinson and McIntyre (1997, p. 21), as presented in Figure 9 overpage, is one of the few that explicitly attempts to define the interrelations between essential teamwork processes. Thus, its significance is critical to the current research because a practical understanding of team action processes (generic to all tasks) is needed in order to foster the ‘skilful practice’ of teamwork and maximise team effectiveness within HE settings.

To begin with, Dickinson and McIntyre (1997) emphasise that empirical evidence has long corroborated the influence of communication on team action processes and outcomes. Communication involves the “active exchange of information between two or more members of the team, as well as an individual member providing information to others in the appropriate manner” (ibid., p. 21) and may also be nonverbal (e.g., hand and arm movements; Bekker, Olson, & Olson, 1995). Its purpose is often to clarify misunderstandings and to acknowledge that mutual understanding of information has occurred between listener and speaker. Accordingly, communication is depicted in Figure 9 as the vital mechanism linking together all other components of teamwork.

**Figure 9: Core Components of Teamwork**



Also, drawing on the work of others, Dickinson and McIntyre (1997) explained that team orientation is critical to teamwork for it encompasses: (i) the nature of the attitudes that members have toward one another, the team task, and their team leadership; (ii) the level of team cohesiveness; and (iii) the assigned importance or awareness of team membership. Likewise, they discussed the importance of team leadership as including the direction, structure and support provided by a formal leader and/or by other team members. Therefore, team leadership and team orientation together are proposed to facilitate mutual performance monitoring; described as a team member's ability to maintain an awareness of team functioning and keep track of fellow team members' work while carrying out their own tasks (Dickinson & McIntyre, 1997).

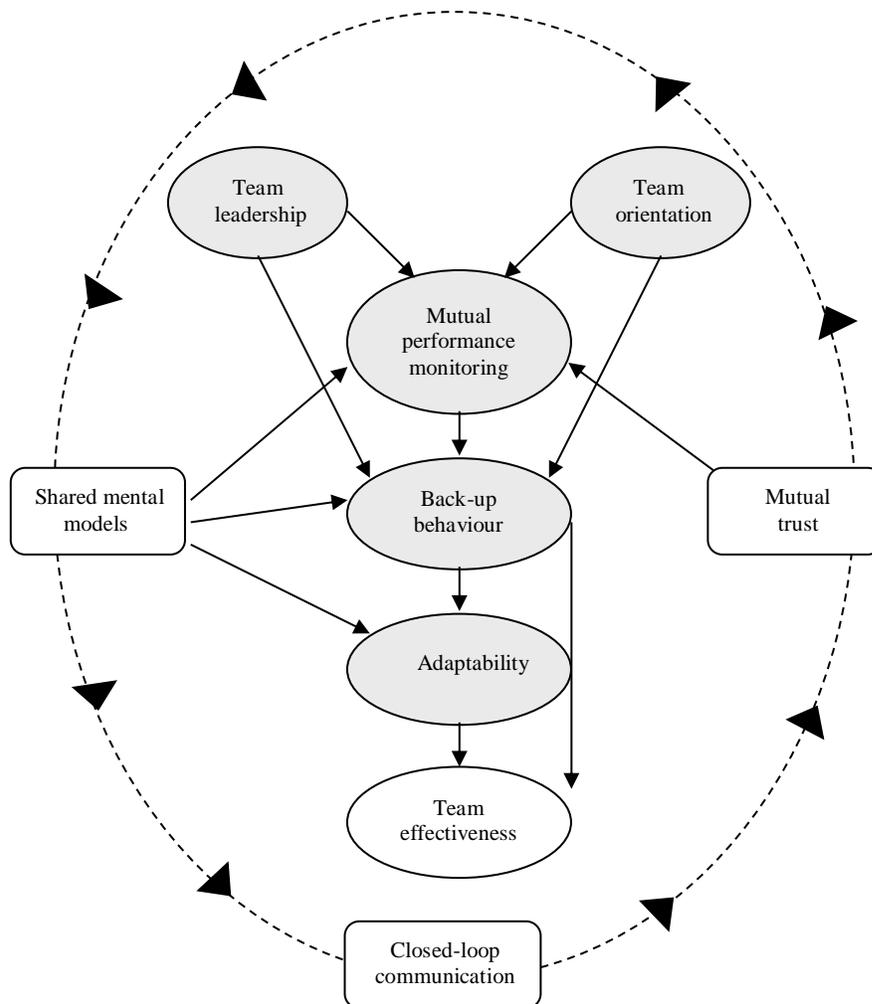
Further, Figure 9 illustrates that performance monitoring drives both the timely provision of feedback and backup behaviours among team members. Dickinson and McIntyre (1997) maintained that teams must adapt and learn to be successful, which requires the giving, seeking and receiving of feedback. They also contended that team members must be willing to help other members perform or redistribute their tasks when the workload has surpassed their capacity. This implies both a degree of task interchangeability among members and a willingness to seek assistance. Finally, the framework (Figure 9) suggests that when the aforementioned teamwork components

occur in unison, teams can successfully coordinate the merger of their interdependent actions to produce a synchronised team performance which may then serve as inputs into future team processes (Dickinson & McIntyre, 1997).

2.3.5.2.2 *Salas, Sims, and Burke (2005).*

The second initiative reviewed is the Big Five model of teamwork proposed by Salas et al. (2005, pp. 560-561) as shown in Figure 10.

**Figure 10: The Big Five Components of Teamwork**



This recently advanced theoretical framework emphasises the centrality of five core processes that include team leadership, team orientation, mutual performance

monitoring, backup behaviour and adaptability which, in turn, require the coordinating mechanisms of shared mental models, mutual trust and closed-looped communication. Notably, the authors acknowledged that the ability of a team to engage in the ‘Big Five’ and its coordinating mechanisms will vary as temporal factors (e.g., team maturation) unfold. Further, they suggested that the importance of these coordinating mechanisms will increase as teams must perform in stressful conditions. Tables 1 and 2 provide an overview of each essential component of teamwork along with the coordinating mechanisms, as considered by Salas et al. (2005).

**Table 1: The Big Five Components of Teamwork**

<i>Teamwork</i>	<i>Definition</i>	<i>Behavioural Markers</i>
Team leadership	Ability to direct and coordinate the activities of other team members, assess team performance, assign tasks, develop team knowledge, skills, and attitudes, motivate team members, plan and organise and establish a positive atmosphere.	Facilitate team problem solving. Provide performance expectations and acceptable interaction patterns. Synchronize and combine individual team member contributions. Seek and evaluate information that affects team functioning. Clarify team member roles. Engage in preparatory meetings and feedback session with the team.
Mutual performance monitoring	Ability to develop common understandings of the team environment and apply appropriate task strategies to accurately monitor teammate performance.	Identifying mistakes and lapses in other team members’ actions. Providing feedback regarding team member actions to facilitate self-correction.
Back-up behaviour	Ability to anticipate other team members’ needs through accurate knowledge about their responsibilities. This includes the ability to shift workload among members to achieve balance during high periods of workload or pressure.	Recognition by potential backup providers that there is a workload distribution problem. Shifting of workload responsibilities to underutilized team members. Completion of the whole task or parts of tasks by other team members.
Adaptability	Ability to adjust strategies based on information gathered from the environment through the use of backup behaviour and reallocation of intrateam resources. Altering a course of action or team repertoire in response to changing conditions (internal or external).	Identify cues that a change has occurred, assign meaning to that change and develop a new plan to deal with the changes. Identify opportunities for improvement and innovation for habitual or routine practices. Remain vigilant to changes in the internal and external environment of the team.
Team orientation	Propensity to take other’s behaviour into account during group interaction and the belief in the importance of team goals over individual members’ goals.	Takes into account alternative solutions provided by teammates and appraises that input to determine what is most correct. Increased task involvement, information sharing, strategizing and participatory goal setting.

**Table 2: The Coordinating Mechanisms of Teamwork**

<i>Mechanism</i>	<i>Definition</i>	<i>Behavioural Markers</i>
Shared mental models	An organising knowledge structure of the relationships among the task the team is engaged in and how the team members will interact.	Anticipating and predicting each other's needs. Identify changes in the team, task, or teammates and implicitly adjusting strategies as needed.
Mutual trust	The shared belief that team members will perform their roles and protect the interests of their teammates.	Information sharing. Willingness to admit mistakes and accept feedback.
Closed-loop communication	The exchange of information between a sender and receiver irrespective of the medium.	Following up with team members to ensure message was received. Acknowledging that a message was received. Clarifying with the sender of the message that the message received is the same as the intended message.

### **2.3.6 Team Effectiveness**

Although the operationalisation of team effectiveness varies in extant literature, effectiveness is often measured in relation to three broad categories: (i) team performance outcomes; (ii) individual performance outcomes; and (iii) team viability (Cohen, 1994; Hackman, 1987; Tannenbaum et al., 1992).

Specifically, the team performance component consists of controlling costs and productive output that meets or exceeds the external stakeholders' standards for quality and quantity (Cohen & Bailey, 1997; Sundstrom, De Meuse & Futrell, 1990). The individual performance factor is concerned with the satisfaction of a team member in terms of team participation, social relationships, growth opportunities (i.e., skills development and acquisition) and organisational commitment (Keyton, 1991; Landy & Conte, 2007). In the context of HE, student satisfaction refers predominately to the favourability or perception of quality of the outcomes and overall experience associated with the learning activity (Oliver & DeSarbo, 1989). Thus, satisfaction occurs when the perceived quality with the learning experience or performance outcomes meets or exceeds the students' expectations (Rapert, Smith, Velliquette, & Garretson, 2004). The third broad category, team viability, is about whether or not the processes used to carry

out the work allow members to work together effectively on subsequent projects (Hackman, 1987; Sundstrom et al., 1990).

In summary, team effectiveness is a multidimensional construct that focuses not only on whether a team has successfully accomplished its tasks but also the extent to which members were satisfied with the team experience (Cohen, 1994; Tannenbaum et al., 1992). This idea draws from the sociotechnical theory which states that both social and technical systems must be maximized for an optimally effective team. Arguably, if a team achieves its goals but the impact of the team experience on a member's learning and well-being is substantially more negative than positive, then one can question whether or not the team was effective. Likewise, one may ask if a team was necessarily ineffective because it did not reach its goals due to circumstances beyond the realm of members' control. Therefore, it is essential for educators to develop a thorough understanding of team effectiveness and the determinants thereof in order to maximise their students' learning experience and teamworking ability which, in turn, may enhance their employability.

#### **2.3.6.1 A review of overall team effectiveness models.**

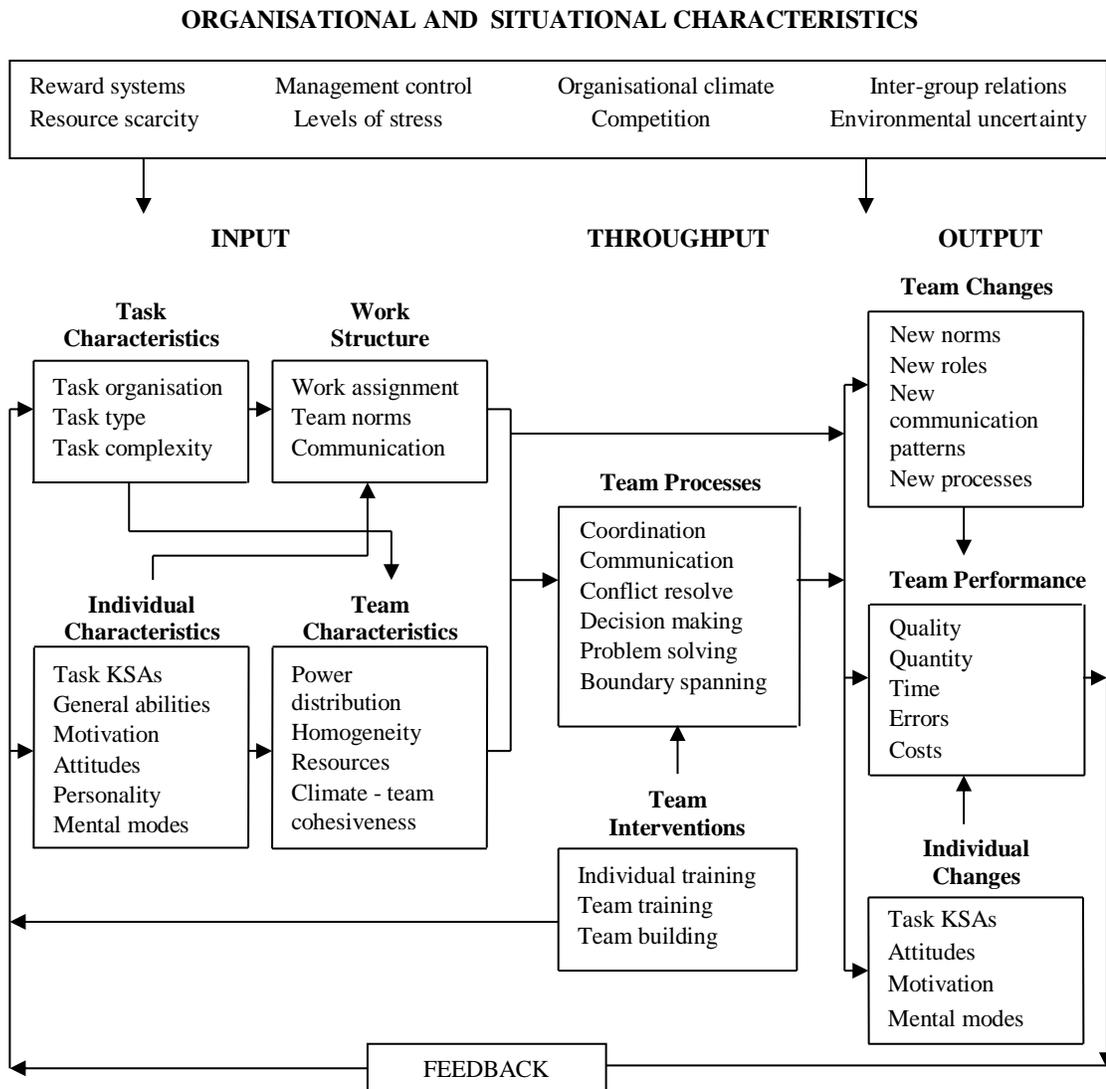
While more than 138 team effectiveness models have been developed over the past 25 years (Salas et al., 2005), only the frameworks considered most relevant to the current research are reviewed below in an attempt to gain a better, more nuanced understanding of overall team effectiveness. Of note, these models were chosen also because of the fact that the researchers incorporated input, throughput and resulting output (IPO) variables into their respective framework, which is an exception to the many initiatives in extant literature that were reviewed by the author.

##### *2.3.6.1.1 Tannenbaum, Beard, and Salas (1992).*

Building on prior initiatives, Tannenbaum et al. (1992, p. 121) advanced the understanding of team effectiveness by developing an integrative framework (Figure 11) more complex than previously described in the extant literature, but with the inclusion of

some of the same variables. Specifically, they identified four high-level input variables (Task, Individual and Team Characteristics and Work Structure) that influence, either directly or indirectly, the output of a team.

**Figure 11: Integrative Model of Team Effectiveness**



For example, the authors highlighted the important relationship between team task and performance, as documented throughout literature (e.g., Steiner, 1972), with task complexity accountable for significant variance in team performance. Likewise, norms can have a powerful influence on processes and subsequent performance; that is, norms

determine the way the work is to be performed (Tannenbaum et al., 1992) such that, when team members perceive shared understandings with each other, the positive affect and propensity to trust fuels individual performance to bolster the overall efficacy of the team (Bandura, 1986; Klimoski & Mohammed, 1994).

Also, Tannenbaum et al. (1992) discussed how by holding constant the task characteristics, work structure and team processes, teams with better *individual* task proficiency, abilities and skills will out-perform teams with lesser individual abilities. Personality traits (e.g., sociability, adjustment and likeability) were also identified as being relevant to team effectiveness. It is worth noting that Driskell, Salas, Goodwin, and O'Shea (2006) recently developed a hierarchical model of specific team member personality facets most relevant to teamworking (see Appendix B).

Another critical difference between the model depicted in Figure 11 and others reviewed in the team literature is the degree to which team processes are defined with teamwork consisting of six key constructs; although, little explanation was given to the basis of their inclusion. However, Tannenbaum and colleagues (1992) did emphasise that *boundary spanning* is a key team process because of the way in which a team manages its interactions with other teams and nonteam members can influence performance, particularly if cross-disciplinary interdependencies exist. The framework (Figure 11) also depicts elements related to team interventions such as training and team building, which the authors explained may be targeted to improve team processes, enhance individual and/or team characteristics, or modify the work structure or task.

In addition, although team performance is emphasised as the primary output of the model, consideration was given to other outcomes such as team and individual changes. These outputs are depicted as cycling back to maintain or revise subsequent inputs and processes which, in turn, may influence overall effectiveness. A final advantage of the Figure 11 framework is that it recognises various situational characteristics and the organisational context within which the team operates, not only at the input stage, but throughout the entire IPO process. Tannenbaum et al. (1992) highlighted, for example,

the relation between an organisation's reward system and its potential to influence team behaviour. With respect to the current research, then, the nature of a rewards or evaluation system may do little to promote the value of teamwork among students if competition rather than collaboration between team members is inadvertently fostered.

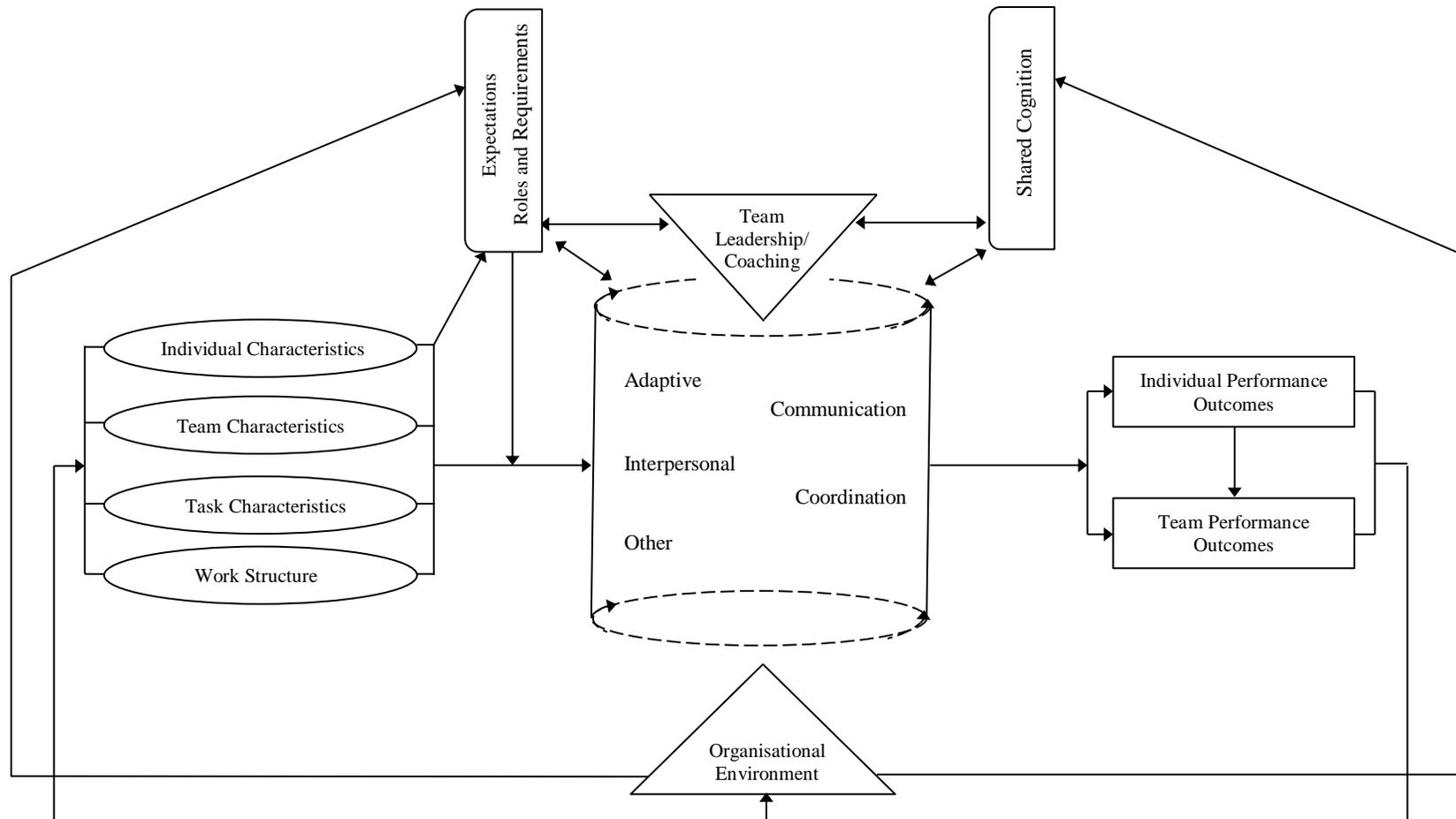
#### 2.3.6.1.2 *Salas, Stagl, Burke, and Goodwin (2007).*

Though many of the constructs framed by Tannenbaum et al. (1992) are encapsulated in the model recently proposed by Salas et al. (2007), the latter has advanced the science of teamwork by adopting a cognitive approach to understanding the conditions and processes of team effectiveness, as shown in Figure 12.

For example, Salas et al. (2007) considered that the relations between inputs and team processes are moderated by shared cognition such as compatible mental models and situation awareness, which influences subsequent individual and team performance outcomes. Specifically, they argued that a set of instantiated cognitive structures enhances team processes because it provides members with the insight required to understand: (i) what they should or should not be doing, thinking, and feeling; (ii) how to go about accomplishing stated objectives; and (iii) when to enact specific knowledge, skills, and attitudes in support of processes in order to meet those objectives. Notably, Salas and colleagues acknowledged that teamwork processes will still ensue in the absence of cognitive influences, however, process losses would likely abound.

In addition to the cognitive aspect, Salas et al. (2007) highlighted the episodic nature of teamwork by illustrating several core team processes cylindrically. Their rationale for depicting teamwork in this way was to show that "several revolutions [of the team processes displayed] may be needed to meet a single objective" (ibid., p. 220).

**Figure 12: The Conditions and Processes of Team Performance**



*Source:* Adapted from Salas et al. (2007, p. 216).

Furthermore, Salas et al. (2007) contended that as multiple objectives are interlaced or additional interrelated but unique projects undertaken, team processes may occur at different intervals for goal accomplishment. In other words, the sequencing and timing of interdependent actions may be regulated, in part, by external factors of the environment. The notion of effectiveness patterns, then, has important implications to the current research as it may inform educators as to when particular resources or intervention meant to enhance their students' teamworking efforts is needed.

Another unique aspect of the Figure 12 framework is the emphasis given to the construct of team leadership. For instance, it is through the leaders' ability to build both trust and perceptions of safety by providing nondefensive responses to team members' questions and challenges, the showing of mutual respect, and valuing open and constructive sharing and discussion of ideas that they are able to drive and maintain members' actions over time (Edmondson, 1999; Zaccaro, Rittman, & Marks, 2001). With respect to the current research, the question arising is one of how student teams can be successful if the majority of students lack leadership abilities, as reported throughout a number of studies (e.g., Drummond et al., 1998; Leggett et al., 2004).

### **2.3.6.2 Conclusions on overall team effectiveness models.**

At a broad level, the team effectiveness models constructed by Tannenbaum et al. (1992) and Salas et al. (2007) have both differences and similarities. One point of commonality is the adoption of some form of IPO platform to frame team effectiveness, as highlighted earlier. Another is the consistent emphasis on input variables as important determinants of team effectiveness even though there is variation among the categories highlighted. Yet another, and perhaps most important, is the emphasis given to the fluidity of teamwork; that is, collective task performance requires adaptive moment-to-moment interactions driven by internal team factors and the external context, and that team outputs can be fed back into the system as input variables. However, the aforementioned models differ with respect to what core processes constitute teamwork, thereby reliably promoting team effectiveness. The conundrum here is one of how the practice of teamwork can be improved if what one is trying to improve remains largely obscure?

While gaps exist in the research, there is an established need to add to the team literature and the wider body of knowledge by conducting further research in this area, particularly in the context of HE.

A comprehensive and unified framework that addresses deficiencies in the current team effectiveness domain would help deepen academics' understanding of, and capacity to build, student teams so that the potential of students is supported and their needs met. Specifically, if graduates emerge from HE with an appropriate 'mix' of teamwork skills then opportunities for employment in their chosen field may be enhanced; albeit, by the extent to which students can recognise and articulate their ownership of teamwork skills and implementation potential in the workplace to employers during the recruitment process.

## **2.4 Part Two – Summary**

A key business principle at every level within an organisation, from that of the individual employee to that of middle management or the executive group, is to be clear about what one is seeking to achieve (Ottewill & Macfarlane, 2001). Without aims, objectives, strategic planning and methods for measuring and monitoring achievements it is unlikely that progress will be made (ibid.). University classrooms possess a task and orientation analogous to that of organisations, as both faculty and students are concerned with learning and other outcomes; particularly given employers' amplified demands for clear indications of graduates' competencies. Consequently, it is incumbent on course designers to consider how best to integrate content knowledge into the curriculum whilst focusing on the development of teamwork skills as an outcome of a university education that, ultimately, may enhance graduates' employability.

As can be seen in the present chapter, there is a substantial knowledge base across various disciplines with respect to teams and related topics. The extant literature has provided many theoretical and empirical arguments, some of which give an insight into the increasing popularity of teams throughout public and private organisations, some

which assert the use of team-based projects as an effective pedagogical tool to develop desirable and measurable outcomes, and some that provide insight into the nature of teamwork and team effectiveness. However, despite the abundance of literature it is apparent that there is still much confusion surrounding the topic as a whole.

Salas, Burke, and Cannon-Bowers (2000, p. 339) in their research into teamwork and its emerging principles asserted that “by its very nature teamwork is a multidimensional construct that is elusive and dynamic, making it difficult to study”. This is further compounded by a lack of agreement throughout the research literature as to the definitional components of a team (Baker et al., 1999), even though there is widespread consensus acknowledging the reliance on teams “across a wide landscape of modern life” (Kozlowski & Ilgen, 2006, p. 115). Moreover, “research has often focused on how teams can be managed without describing what teamwork really is” (Lembke & Wilson, 1998, p. 928). Indeed, many frameworks “leave the term teamwork very vague” (Salas et al., 2000, p. 341) or, focus on one construct (e.g., team performance) to the exclusion of others. In this respect it may be considered that such models, essentially, are incomplete. In other cases, researchers have labeled cohesion and trust, for example, as input variables when these are features that arise through interpersonal dynamics among team members over time.

Notwithstanding, it is only when educators have a holistic understanding of teamwork as a multidimensional construct and the conditions under which it is conducted that they can carefully design and guide the process to ensure students’ optimum success (James, McInnis, & Devlin, 2002; Johnson et al., 2007; Kolb, 1984). The intent of this literature review was to focus on those key areas in which theory, practice and research are well-developed and to provide a substantive basis for actionable recommendations; in spite of the complexity surrounding the discipline of teamwork as a whole, the underlying theme that emerges from the literature is that, under proper conditions, effective teams reflect the adage that ‘the whole is greater than the sum of its parts’.

To address the shortcomings in the literature, a ‘grassroots’ approach was adopted by the author that has led to the timely development of a holistic, integrated model for promoting team effectiveness in the context of HE. This hypothetical model is detailed in the next chapter and forms the basis of the current research methodology outlined in Chapter 4.

## **2.5 Chapter Summary**

The literature was reviewed relevant to enhancing graduates’ employability through the development of teamwork skills, which are considered as one of the most important attributes to a business student’s success. The academic research attention as addressed in the current thesis was guided by the overarching question: What ‘requisite mix’ of teamwork skills are expected of a business graduate at entry into career-ladder employment?

In Part One of the review of literature, policies and debates aimed at boosting national economic wealth and the role that HE plays in this relationship were discussed. Alternative approaches to understanding the HE-interface with graduate employability were presented, as well as frameworks for capturing the development of said in HE curriculum. In Part Two, the literature was reviewed relevant to fostering the ‘skilful practice’ of teamwork and promoting team effectiveness. The valued-added effects of integrating student team-based projects throughout undergraduate studies was discussed along with some common drawbacks associated with student teams. This approach enabled the author to emphasise that effective teams have the potential to yield coordinated and synergistic outcomes but, if conditions are less than ideal, teamworking can become the vehicle for acrimony, conflict and freeloading. Finally, the author drew attention to the nature of teamwork and team effectiveness; existing models of each construct believed to be most relevant to the current study were reviewed and limitations outlined. In the next chapter, the hypothetical model for promoting team effectiveness in the context of HE is presented and discussed.

## CHAPTER 3

### HYPOTHETICAL MODEL FOR THE RESEARCH STUDY

#### 3.0 Introduction

An outcome of the literature reviewed in Chapter 2 has been the development of a hypothetical model (Figure 13, p. 77) to be used in guiding the current study to better understand variables of the learning environment that reliably promote teamwork practice and overall team effectiveness in the HE setting, and as a basis for the current research. Increasing the awareness of the elements that make for the 'skilful practice' of teamwork and the conditions under which teams can effectively structure, support and lead their performance will prove beneficial to undergraduate degree students as they engage in collaborative activities as part of their studies in preparation for work in the business world.

The underlying premises of the hypothetical model, as shown in Figure 13 is that students must: (i) bring adequate knowledge, skills and abilities (KSAs) to bear on the work (Baker et al., 1999; Cannon-Bowers & Salas, 1997; Tannenbaum et al., 1992); (ii) make purposeful choices (i.e., personal agency; Bandura, 1997) and exert sufficient effort toward the accomplishment of mutual goals or rewards (Macaulay, 2000; Prosser & Trigwell, 1999); (iii) move beyond self-interest to mutual interest by engaging in promotional interaction including self-respect and respect for others, mutual help and assistance, open exchange of needed information and resources, constructive management of conflict and trust (Edmondson, 1999; Johnson et al., 2007); and (iv) have the capacity to execute an appropriate set of behaviours (e.g., flexibility, tolerance for ambiguity, openness to being influenced and influencing others in a non-threatening way) in situations characterised by cultural diversity (Ang, Van Dyne, & Koh, 2006; Thomas & Inkson, 2004; Triandis, 2006).

### 3.1. Conceptual Development of Hypothetical Model

As defined in the hypothetical model (Figure 13, p. 77) there are four hierarchical input categories: *individual characteristics*, *team characteristics*, *task characteristics* and *work structure*. Relevant constructs within each category influences, in part, the execution of taskwork and team action processes which, invariably, affect overall team effectiveness. Also, the model (Figure 13) gives emphasis to the fact that teams are context-dependent and linked to a broader organisational system.

#### 3.1.1 Input Variables

The category of *individual characteristics* includes KSAs, beliefs about self-efficacy and self-esteem, motivation, personality and preferred learning style. These characteristics in relation to teamwork were emphasised in the previous chapter; it is outside the scope of the current research to extend focus beyond this.

The second category of *team characteristics* encompasses team-level KSAs, size, composition and norms such that the relationships of these variables to team processes and performance outcomes have been formally established in extant literature (Cannon-Bowers & Salas, 1997; Cossé et al., 1999; Earley & Mosakowski, 2000; Hackman, Wageman, Ruddy, & Ray, 2000; Strom et al., 1999).

The third category pertains to the characteristics of the *task* including the design, complexity and organisation thereof. Both theoretical and empirical research evidence suggests that the team task is critical to promoting team effectiveness for two reasons: *firstly*, the team task sets the minimum requirements for resources, including an appropriate combination of team members and organisational supports; and *secondly*, it determines the team processes necessary for goal accomplishment and other performance outcomes (Hackman et al., 2000; Kozlowski & Ilgen, 2006). Hence, the importance of the task design—the team task should be structured so that it is a whole and meaningful piece of work for which members share responsibility and accountability (Hackman et al., 2000). Also, the team task should be intellectually

challenging, consequential, well aligned with the team's purpose and foster energetic task-focused effort so as to engage the full range of talent across members (ibid.). The argument here being that if students do not view the learning task as a useful one, or if they do not perceive the potential for development within the exercise, then they will work in surface ways, limiting the achievement of outcomes, no matter how hard academic staff work to promote harmonious interactions (Tempone & Martin, 1999). In addition, the team task must not impose workload demands that exceed a team's ability to fulfil them as this could lead to diminished team coordination and performance (Bowers, Braun, & Morgan, 1997; Steiner, 1972).

The fourth input category of *work structure* (e.g., communication patterns, established meeting times, core norms of conduct) also affects both team members and processes that occur over time (Repetti, 1987; Tannenbaum et al., 1992); though the proposed model (Figure 13) does not extend focus beyond this acknowledgement.

### **3.1.2 Deployment of Assets and Cognitive-Affective Processes**

Effective teams require more than just well-defined taskwork. Namely, team members' must communicate actively and deploy their assets in order to operationalise team action processes, as shown in Figure 13. Significantly, this assumes that individuals are not only aware of their assets but have the capacity to articulate that what they can contribute is of value to the team. Further, both cognitive and affective state-like constructs work *together* to facilitate the necessary exchange of information and help transform input variables to team action processes, leading to team effectiveness. This perspective is in contrast to cognitive-rich perspectives that tend to minimise or even isolate the impact and guiding influence of emotions and intentions on learner success. It is important to note that while cognitive and affective processes are distinct in their own right, it is because the links between them are so strong that it seems impossible to disentangle or separate them. For example, previous research has suggested that cognitive processes include the four aspects of team climate, team learning, team mental modes and transitive memory (Kozlowski & Ilgen, 2006). These processes are based on a foundation of perceived psychological safety and trust (Ilgen, Hollenbeck, Johnson, &

Jundt, 2005) which are affective concepts and recurrent themes within extant team literature. For example, Kahn (1990) emphasised safety as a condition required for engagement whilst Aubé and Rousseau (2005) and others (Baker, 2001; Ilgen et al., 2005) all noted the importance of team climate. Therefore, it is reasonable to concede that perceptions of a positive team climate, underpinned by feelings of safety and trust, facilitate team performance because they enable members to communicate, receive feedback as helpful, adapt to unexpected events or situations and take appropriate actions to achieve shared goals.

With respect to affective processes, cohesion and collective efficacy are often described as major determinants for teams to succeed. Cohesion is referred to as the force that binds the team or the strength of members' emotional attachment or commitment to the team (Carron & Brawley, 2000). It includes and extends beyond trust, is facilitated by positive interdependence and improves the motivation of members to work hard on behalf of the team to make the successful attainment of shared goals more likely (Powell, Galvin, & Piccoli, 2006). Collective efficacy or potency beliefs refers to the team's shared perception of its capability to successfully perform a specific task (Bandura, 1997). Research suggests that such beliefs, in conjunction with goals, contribute significantly to the level of motivation and team performance (Bandura & Locke, 2003; Gully, Incalcaterra, Joshi, & Beaubien, 2002).

However, team cohesiveness is not in and of itself 'something' that an individual can 'bring' to the team—it arises from the social system in which it develops. Likewise, team efficacy is not simply an aggregate of self-efficacy across members; rather it references the team as a collective entity with respect to team behaviours that unfold and coalesce over time (Kozlowski & Ilgen, 2006). Therefore, cognitive-affective processes may be considered as emergent states and, by nature, recursive; hence, they are illustrated in a cyclical manner in the hypothetical model (Figure 13).

### **3.1.3 The ‘Skilful Practice’ of Teamwork: Dimensional Structures**

At the centre of Figure 13 are the dynamic and adaptive processes that define teamwork; processes often missing in team effectiveness models presented in extant literature. Further, the proposed hypothetical model introduces and places specific emphasis on the notion of ‘skilful practice’, signifying that team action processes and, in turn, team effectiveness can be achieved only when members actually communicate and deploy their assets appropriately in context, as stated earlier. Concomitantly, it is imperative that members know what team processes are and have an understanding of what each entails so as to execute them successfully for the achievement of shared goals. In this sense, appropriately aligned teamwork skills, mediating processes and team actions are critical enablers of overall team effectiveness. It should be noted that the particular team action processes, such as decision-making, embodied in Figure 13 were adapted from the frameworks advanced by Tannenbaum et al. (1992) and Dickinson and McIntyre (1997).

The hypothetical model (Figure 13) also introduces the importance of ‘expert coaching’ to help team members take advantage of their positive performance conditions and to learn how to manage tensions that invariably arise as different theories, perceptions, opinions and conclusions are expressed. In the context of the current research it is assumed that the role of the ‘expert coach’ is to be carried out by the instructor who, arguably, is more likely than students to have a better understanding of team dynamics and of the determinants of team effectiveness. By extension, because teachers explicitly design the team task with which student teams must engage, they are primarily responsible for launching students on a fair, level playing field, guiding them from the sidelines should problems occur and helping them learn from their team experiences by means of engaging in reflective practices. In addition, successful coaching may lie in an educator’s ability to create a culture of learning that students ‘buy into’ and appreciate. Indeed, research into the student experience at university has shown that positive interactions between faculty and students and among students, as well as teacher encouragement and feedback, are critical factors in undergraduates’ success at university (Mason & Weller, 2000). This is in line with Lave and Wenger’s (1991) concept of a learning community.

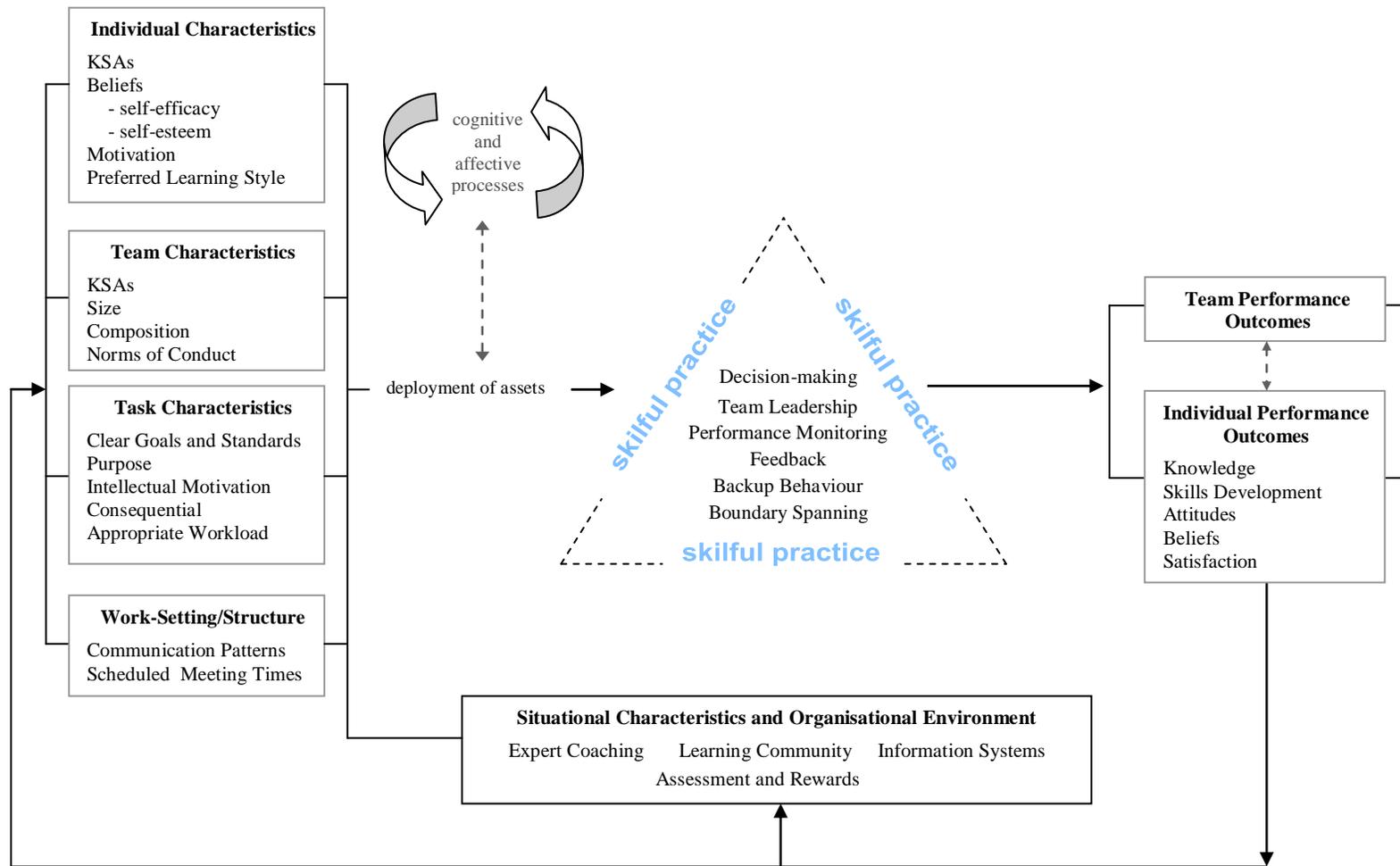
### **3.1.4 Output Variables**

The inclusion of team performance as an outcome in Figure 13 is straightforward—arguably, the main purpose of teams is to achieve tasks that members cannot fulfil as individuals. Accordingly, team performance is most frequently determined by team-produced outputs (Ilgen 1999; Shea & Guzzo, 1987); in terms of student teams, this is often reflected as the score or grade achieved on the project work.

Individual performance outcomes, such as satisfaction and skills acquisition, are included as essential components in the hypothetical model (Figure 13) as it also can be argued that the pedagogical objective of student team work should be to improve the learning of each individual that participates in the team project; educationalists maintain that collaboration helps students achieve deeper learning outcomes, as discussed earlier. Also, student satisfaction with team work and performance are correlated (Fisher, 2003; Hosie, Sevastos, & Cooper, 2006), which is likely to influence both attitude and performance toward subsequent tasks (Dyer, 1995; Lembke & Wilson, 1998). Notably, team viability is not depicted in Figure 13 as student teams, being most like project teams, are relatively short-lived, produce one-time outputs and have a low probability of reforming with the same members (Cohen & Bailey, 1997).

Finally, the hypothetical framework (like some team effectiveness models) illustrates important feedback loops; as Kozlowski and Ilgen (2006, p. 81) stated: “Process begets structure, which in turn guides process”.

**Figure 13: Hypothetical Model of Team Effectiveness**



## **CHAPTER 4**

### **RESEARCH DESIGN AND METHODS**

#### **4.0 Introduction**

In this chapter the research design and methods used to conduct this multistrand, mixed methods (MM) study are presented. It commences with a discussion of the research aim and objectives; then, the research approach and the philosophical assumptions underpinning MM research are explained. The research design is documented; specifically, the development and application of the MM strategy of inquiry. This is followed by a detailed explication of the research methods utilised for each separate strand of the study. Next, the pilot study and ethical considerations are reported. The limitations of the study are addressed and a final summary made of the chapter.

#### **4.1 Research Aims and Objectives**

Developing a grounding in a ‘core’ set of teamwork skills for students leads to skilful practice in private life and professional situations after graduation. Demonstrable teamwork skills are critical not only to business graduates about to assume employment but also to those individuals who are currently in the workforce (Barrie, 2004; CBC, 2000; Hager et al., 2002). Therefore, as demonstrated in the literature review, it is in the interests of all stakeholders that the teaching of teamwork skills and their development in students are explicitly planned and systematically implemented throughout the undergraduate curriculum.

The predominance of team activities and projects represents a major trend in HE as it provides an opportunity for students to learn how to work as part of a team (Johnson et al., 2007; Slavin, 1988) and, thus, be work-ready to join the business world (Fink, 2002; Romme, 2003). However, research indicates that academic staff often have limited understanding of how effectively to design and support the implementation of an active

learning pedagogy so that its full potential is realised, as highlighted in Chapter 1. Arguably, a first step towards addressing the issue would be to determine what students perceive to be important for their team experience to be successful. This does not mean that faculty should compromise sound teaching principles or educational standards in order to be more in tune with students' views, but by capturing students' beliefs, a window is provided through which curriculum developers and teaching staff become better positioned to make judgments about the quality of teaching, learning design, delivery and its support which, in turn, can be used for producing change. As Biggs (1999) and others (Marsh, 1997; Ramsden, 1991) have argued, students' evaluation of their learning environment has been shown to be a critical indicator of quality of teaching and of how much is actually learned in class. Also, it is commonly and widely allied to academic tenure, promotion, university reputation and student choice (Moore, 2006), as well as to government funding and rewards (Kerr & Kulski, 2009).

However, the extant literature indicates that students' perceptions of their team experiences have not been adequately studied (Athiyaman, 2001; Gottschall & Garcia-Bayonas, 2008; Hartley, 2005). Specifically, there is limited research on teacher-controlled variables and the team experience from the students' perspective in HE. Thus, the **first aim** in the current research was to investigate relationships among those variables of the learning environment that students perceive as significantly influencing his or her (a) teamworking ability development, and (b) overall satisfaction with the team experience, as outputs of team effectiveness. It was envisaged that insights drawn would inform the development of strategies and the recommendation of a 'best practice' model of team effectiveness, to help educators improve the quality of students' collaborative experiences and outcomes which, in turn, would enhance graduate employability.

Interestingly, while employers and professional bodies have made it clear that by the end of their university studies graduates are expected to have acquired teamwork skills that can be transferred into the workplace, little explanation has been provided as to what these teamwork skills are and what level of teamwork skills graduates are expected to

bring to the workplace (Hodges & Burchell, 2003; Sin & Reid, 2006). Instead, “all one frequently hears is simple generalised platitudes about the need for *team players*” (Stevens & Campion, 1994, p. 506); thus, broad reports from employers claim that business graduates lack the teamwork skills needed to meet the demands of ‘real’ work environments (Caspersz et al., 2005; Leggett et al., 2004). This fundamental disconnect between perceptions and expectations is a significant problem; for at issue, is whether or not student team-based projects are an effective means for developing the skills needed for teamworking required later in ‘real’ work settings. In other words, to what extent do these projects serve as a bridge between the worlds of academia and corporate?

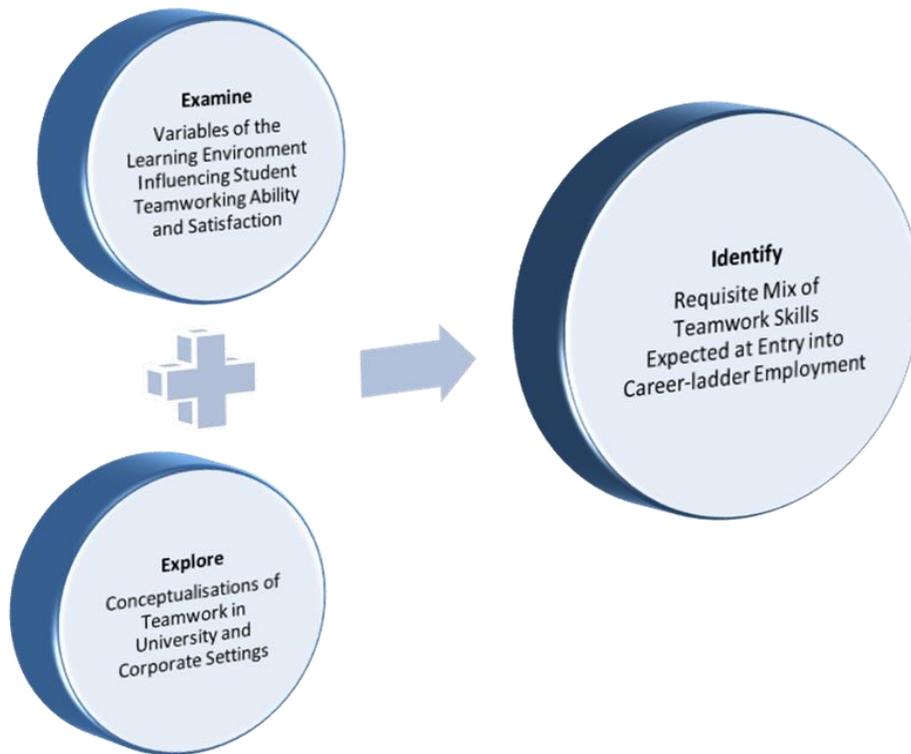
A **second aim** in the current study, therefore, was to help close the existing gap between perceptions and expectations as it relates to employers’ needs for business graduates equipped with teamwork skills and educational response—the key premise being that if teamwork skills and characteristics most valued by employers are identified, then educators should be able to design projects that enable students to acquire the requisite teamwork skills and facets that meet the employers’ expectations.

To accomplish the second research objective, the author sought to explore the perceptions (or at least perceived perceptions) of employers and business undergraduates in their final unit of study so as to gain an understanding about how teamwork is conceptualised in both university and corporate settings; particularly, what skill requirements held at the individual level make a team successful.

Guiding the research study was the overarching question: What ‘requisite mix’ of teamwork skills are expected of a business graduate at entry into career-ladder employment? It was in seeking to answer the overarching question that inferences drawn from both focus areas of the current research will assist curriculum designers and educators to better facilitate the development of business students’ teamworking skills and, ultimately, enhance their employability. Concomitantly, it was hoped that findings could assist students during the recruitment process, for as established in the literature review, it is during the interview that graduates must translate their competencies into a

language that resonates with employers so as to convert their employability potential into actual employment. The major research objectives of the study are presented in Figure 14.

**Figure 14: Major Research Objectives**



## **4.2 Research Approach**

### **4.2.1 Mixed Methods Research**

Goodman’s position was that “the world is as many things as there are ways to describe it” (Salomon, 1994, p. 13). Similarly, Einstein’s view was that “not everything that can be counted counts, and not everything that counts can be counted” (Patton, 1990, p. 12). Both notions suggest the potential for debate about which tradition of research one should follow in order to carry out an investigation. Indeed, one can hardly fail to notice the schism between qualitative and quantitative approaches documented both explicitly

and implicitly throughout the extant literature (Denzin & Lincoln 2005; Bryman, 2008; Newman & Benz, 1998; Todd & Nerlich, 2004).

According to Tashakkori and Teddlie (1998), among others, both qualitative and quantitative methods may be used appropriately (either concurrently or sequentially) within a single research study and neither method nor paradigm should have pre-eminence over the research question. That is, the combining or mixing of approaches and methods allows for a level of depth and breadth to a study not attainable from one approach or method. Brewer and Hunter (1989, p. 17) are of the opinion that given the complexity of social phenomena, most studies in the social and behavioural sciences and applied disciplines now use mixed research methods as a matter of course, as such an approach permits investigators “to attack a research problem with an arsenal of methods that have no overlapping weakness in addition to their complementary strengths”. Drawing on earlier works, Denzin (1978) also argued that a hypothesis that has survived a series of tests with different methods can be regarded as more valid than a hypothesis tested only with the help of a single method.

In a similar vein, Greene, Caracelli, and Graham (1989) in their empirical review of published MM studies identified five rationales for adopting a mixed method (MM) research design. They advanced the argument that the flexibility of MM designs allows for: (i) convergent results, commonly referred to as triangulation; (ii) development, as in using the results from one method to develop or inform the other method; (iii) expansion, which extends the breadth and range of inquiry by using different methods for different inquiry components; (iv) initiation, which prompts the discovery of paradox and contradiction and new conceptual frameworks; or (v) complementarity or elaboration, as in providing richness of detail. Further, mixing methods can serve a larger, transformative purpose to advocate for marginalised groups (see Mertens, 2003).

In keeping with recommendations by MM proponents across the wide field of education, the author utilised a MM approach which involved collection and analyses of both numeric and textual data at different points in the study. Additionally, the research study

was approached from the pragmatic paradigm which embraces the use of multiple, diverse philosophical positions and methods to best answer the research questions.

#### **4.2.1.1 Philosophical assumptions underpinning mixed methods research.**

Pragmatism, deriving from the works of Peirce, James, Mead, Dewey, and Bentley (Cherryholmes, 1992; Rorty, 1991), has come to be regarded as the philosophical partner for MM research, providing a set of assumptions concerning reality, knowledge and the researcher's role (Creswell et al., 2003; Teddlie & Tashakkori, 2006). However, it must be recognised that pragmatism as a paradigm perspective revolves more around the practical outcomes of the research yet to be realised—the intended actions, solutions and consequences of inquiry—than it does with assumptions about knowledge and understanding that, often, also are associated with specific research methods (Creswell, 2007; Denscombe, 2010; Maxcy, 2003; Morgan, 2007). Pragmatism, however, does not imply that other paradigmatic perspectives are less concerned with solutions to real-world problems; nor does it imply a shameless rejection of the valuable contributions that different paradigmatic traditions have to offer toward increasing one's understanding of people and the complexities of the social world (Rallis & Rossman, 2003). Instead, pragmatism implicitly embraces the use of multiple, diverse philosophical positions and methods that best will meet the myriad demands of a particular inquiry and, thereby, help provide the most informative, balanced and useful answers to the research questions (Johnson, Onwuegbuzie, & Turner, 2007; Rocco et al., 2003; Tashakkori & Teddlie, 1998). Also, this does not mean that pragmatists approach research with an 'anything goes' course of action or without being guided by relevant principles or moral codes (Denscombe, 2010; Maxcy, 2003); rather, to adopt a pragmatic position means to believe that "the essential criteria for making design decisions are practical, contextually responsive, and consequential" (Greene & Caracelli, 2003, p. 101).

With this in mind, in terms of *ontological assumptions*, pragmatist researchers hold the view that there is an external world independent of the mind (i.e., the reality of the world we experience and live in) as well as that constructed in the mind (Cherryholmes, 1992;

Creswell, 2009). As such, mixing methods is required in order to respect all facets of social reality (Greene & Caracelli, 2003). In terms of *epistemological assumptions*, knowledge is viewed as tentative, as changing over time and as a product of the historical era and political, cultural and other contexts within which it is produced (Creswell, 2009; Denscombe, 2010; Johnson & Onwuegbuzie, 2004). Consequently, it can never be absolute or perfect for what is understood as truth today may not hold true in the future, as emphasised by Popper (2002) —one need only to recall theories like the ‘world is flat’ or the ‘sun revolves around the Earth’. So, for researchers adopting a pragmatic perspective, truth, meaning and knowledge obtained and given through experience and experimenting should be regarded as instrumental and provisional (Johnson & Onwuegbuzie, 2004).

### **4.3 Research Design**

#### **4.3.1 Development of the Mixed Methods Strategy of Inquiry**

The strategy of inquiry or research methodology developed and utilised for the multistrand MM study resulted from the author’s consideration of other MM typologies (Creswell et al., 2003; Tashakkori & Teddlie, 2003), as well as several dimensions considered when planning a MM inquiry.

According to Tashakkori and Teddlie (2003), multistrand MM designs can be distinguished on three dimensions: (i) having single or multiple approaches (i.e., having two qualitative or two quantitative strands vs. having both qualitative and quantitative strands); (ii) stage of integration (i.e., within method only vs. across the stages of research conceptualisation, method, and analysis/inference); and (iii) procedures or time ordering for linking the strands (e.g., sequential vs. concurrent). Also, the priority given to quantitative and/or qualitative research in a particular study is an important dimension; in some studies, the status might be equal (denoted as QUAN and QUAL as per MM nomenclature; based on Morse, 1991) whereas in other investigations emphasis may be given to one or the other (Creswell, 2009). That is, sometimes a researcher intentionally will use a secondary form of data in a supportive role to a larger study (e.g.,

Rogers, Randall, & Bentall, 2003), which would be represented in lower case letters (i.e., qual or quan). Notably, these factors and the purpose of the research help shape the basic procedures that the investigator will use in implementing the strategy. Further, it is clear that the variety of ‘mix’ or combination of approaches, methods and use within a single MM is almost unlimited; the point is for researchers to mindfully create a strategy with respect to the underlying research questions, as opposed to the common approach in either traditional quantitative or qualitative research where investigators are given a ‘menu of designs’ from which to select (Johnson & Onwuegbuzie, 2004).

Predominately, the strategy of inquiry that framed the current research study incorporates aspects of Teddlie and Tashakkori’s (2003) sequential mixed design, which is characterised by two strands of research, permitting the author to answer both confirmatory (quantitative) and exploratory (qualitative) questions chronologically in a pre-specified order. The rationale for utilising this particular research design was to attain a greater integration of the different methods and to expand the depth and breadth of information that was not possible if only one approach had been selected. By using both qualitative and quantitative practices, a more comprehensive and accurate multidimensional view of education and the learner can be gained, thus enhancing the quality of educational research and increasing its usefulness.

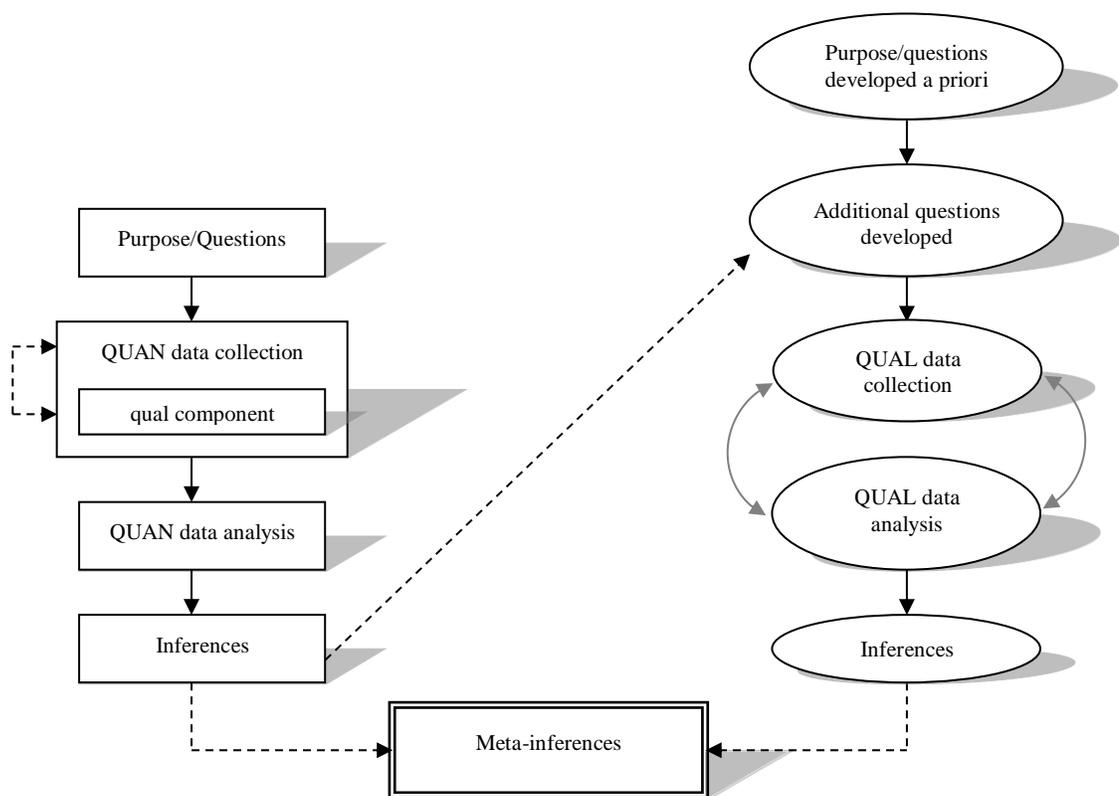
#### **4.3.2 Applying the Mixed Methods Strategy of Inquiry**

The research design for the current study comprised two strands using different methods. Particularly, **Strand One** was a quantitative investigation involving the collection and analysis of survey data with a small qualitative component embedded or integrated within the primary database to serve a supportive role. According to Creswell and associates (2003), this is a good example of integrating or mixing at data collection but is typical of the concurrent designs. This secondary form of data was obtained by means of two open-ended questions that provided participants with the opportunity to raise new issues or extend those provided in the structured questionnaire, thereby enabling the author to examine some general themes and further develop understanding of the central phenomenon (Bazeley, 2002; Cannell & Kahn, 1968). Inferences from this strand of the

study, in part, were used as a springboard for the development of subquestions for the second strand; another example of where mixing occurred.

**Strand Two** was qualitative, using a semistructured face-to-face and one-on-one interview technique. The process of data interpretation was iterative in order to avoid a backlog of qualitative data, as recommended by Silverman (2000).

**Figure 15: Sequential Mixed Methods Design**



**Source:** Developed from Tashakkori and Teddlie (2003, p. 688); Creswell et al. (2003, p. 226).

Meta-inferences were based on findings from both strands of the study so as to help answer the overarching research question. Both strands of the research were given equal status or importance (QUAN/QUAL), with each data set collected and analysed independently and conclusions drawn. A diagrammatical representation of the strategy

of inquiry formulated and utilised for this research is shown in Figure 15; denoted as QUAN + qual → QUAL, as per MM nomenclature

## **4.4 Research Methods**

According to Creswell (2009), the specific methods or procedures of research that translate the approach into practice comprise the research questions, hypotheses (where applicable), data collection, analyses and validation. In the following section, each of these items is discussed in relation to Strands One and Two of the research study.

### **4.4.1 Strand One - Quantitative Investigation**

#### **4.4.1.1 Secondary research questions and hypotheses.**

In line with the research aims and objectives, Strand One of the study focused on examining students' perceptions of the learning environment in order to identify variables impacting their teamworking ability development and overall satisfaction with the team experience. The independent variables measured were learning community, intellectual motivation, appropriate assessment, appropriate workload, good teaching and clear goals and standards. The first strand of the study was guided by three secondary research questions:

*SQ<sub>1</sub>*: What teacher-controlled variables in the learning environment significantly influence students' teamworking ability development?

*SQ<sub>2</sub>*: What teacher-controlled variables in the learning environment significantly influence students' overall satisfaction with their team experience?

*SQ<sub>3</sub>*: What 'best practice' model of team effectiveness can be recommended to academics to better facilitate and support their students' teamworking efforts and enhance the successful development of outcomes?

To meet the objectives of Strand One of the study, six pairs of hypotheses on student teamwork ability and satisfaction were tested, as outlined in Table 3 over page:

**Table 3: Testable Hypotheses**

<b>Research Hypotheses</b>	
H <sub>1A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of belonging to a learning community.
H <sub>1B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of belonging to a learning community.
H <sub>2A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of the intellectual motivation of the team task.
H <sub>2B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of the intellectual motivation of the team task.
H <sub>3A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of appropriate assessment.
H <sub>3B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of appropriate assessment.
H <sub>4A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of appropriate workload.
H <sub>4B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of appropriate workload.
H <sub>5A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of good teaching.
H <sub>5B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of good teaching.
H <sub>6A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of clarity of goals and standard of work expected.
H <sub>6B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of clarity of goals and standard of work expected.

#### **4.4.1.2 Data collection.**

##### *4.4.1.2.1 Sample and procedure.*

Four hundred business students undertaking ‘Capstone’, the culmination unit in the BComm programme at a large Australian university, were invited to complete a structured questionnaire (see Appendix C). Business students in their final semester of study before graduation were ‘purposively’ chosen (Cavana, Delahaye, & Sekaran, 2000) because they were more likely to have the richest experiences on which to base overall perceptions, having engaged in teamwork assignments/projects over the period of their studies. Also, it was expected that these students, being close to graduating from

university and seeking permanent, full-time employment, would be more likely to possess and have the ability to deploy assets that make for the 'skilful practice' of teamwork, which may not be the case for students in earlier years. The student demographic included both local and international students.

#### *4.4.1.2.2 An overview of the student team-based project.*

Research participants collaboratively worked in teams as part of normal study requirements for unit completion; in fact, the Capstone unit is a compulsory component of enrolment and assessment in the BComm degree. The unit was designed to provide students with an authentic hands-on, problem-based learning experience where they could apply both knowledge and key generic skills acquired through the business curriculum that employers expect from competent business graduates (Forde & Bower, 2006). The team project, referred to as CapSim<sup>®</sup>, required students to manage a virtual company by inputting a range of research and development (R&D), marketing, production, financial, human resources (HR) and total quality management (TQM) initiatives in sequential rounds each of which represented one complete year of operations. The project was conducted during a 13-week semester, with team assessment totaling 45% of a student's grade. Thus, teamwork was important to the individual student.

Students deliberately were assigned to four-person teams (on average) by academic staff to maximise the gender, race and age diversity as well as their academic majors or disciplines. Each team was leaderless in the sense that formal or designated leaders were not appointed. Students had to self-manage their team processes in such a way that the task was achieved and relationships established and developed. Students were given a 'team member guide' and required also to develop an agreement or contract describing the expectations of each member. All students held a copy of the Capstone workbook containing critical learning support material. Further, students were given relevant information in relation to the unit itself by means of a Unit of Study outline wherein teaching staff showed curriculum alignment across intended student learning outcomes,

learning activities, assessment tasks and the assessment criteria for measuring achievement of learning outcomes.

To facilitate team project completion, approximately 100-120 minutes of the 3-hour class was devoted each week to the team project. A teaching academic or tutorial member was present at each team session. Staff members also were available on a consultation basis outside of class hours. Staff were offered a pre-semester training course to acquaint themselves with the project and its relevant exercises.

#### 4.4.1.2.3 *Instrumentation and administration.*

To give voice, and respond effectively, to the student experience, the research instrument used in the first strand of the study was a modified form of Ramsden's (1991) Course Experience Questionnaire (CEQ) which consists of a set of validated scales available through Australia's Department of Education, Science and Training (DEST), and is commonly and widely used within several Australian universities including the Business School where the current investigation was undertaken. Minor refinements were made to the questionnaire to target students' perceptions of the learning environment at the unit level, rather than at the level of whole course or degree as was the objective of the CEQ. This included also the addition of two open-ended questions; viz., '*what were the best aspects of the unit?*' and '*what aspects of the unit are in need of improvement?*'

The student feedback questionnaire (see Appendix D) consisted of four sections each with a specific area of concern:

*Section I* asked students to state their level of agreement/disagreement with statements concerning their team-based learning experience. Students' perceptions were elicited for six multi-item scales: (i) *learning community* (5 items), e.g., "I felt part of a group of students and staff committed to learning"; (ii) *intellectual motivation* (4 items), e.g., "I found my studies in this unit intellectually stimulating"; (iii) *appropriate assessment* (3 items), e.g., "To do well in this unit you didn't just need a good memory"\*; (iv)

*appropriate workload* (4 items), e.g., “The workload was not too heavy”<sup>\*</sup>; (v) *good teaching* (6 items), e.g., “The staff member was extremely good at explaining things”; and (vi) *clear goals and standards* (4 items), e.g., “I usually had a clear idea of where I was going and what was expected of me in this unit”. The format for rating all items was a five-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Seven items were reverse-scored (<sup>\*</sup>) to control for acquiescence response (Bryman & Cramer, 2009).

*Section II* was designed to measure students’ perceptions as to whether or not the learning experience developed their ability to work as a team member, as well as their overall satisfaction with the team experience. These items were rated using a five-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

*Section III* required students to reflect on their teaching and learning experiences within the Capstone unit so as to provide further feedback concerning the best aspects (BA) of the project and aspects in need of improvement (NI). The qualitative data was collected by means of two open-ended questions.

*Section IV* requested socio-demographic information from respondents in relation to gender, age, dominant language spoken (i.e., English vs. non-English as a second language) and academic major or discipline studied.

Administration of the self-completion questionnaires required approximately 10-15 minutes and, having secured appropriate staff approval, was carried out during class time in one of the final three weeks of semester.

#### **4.4.1.3 Data analysis.**

All quantitative data were analysed using the Statistical Package for the Social Science (SPSS) software version 17. The data file that was created was checked for data entry errors by producing frequency distributions for each question. Also, as part of the initial analyses Cronbach’s coefficient alpha ( $\alpha$ ), were computed for each scale to confirm the

research instrument as psychometrically robust and assumptions underpinning the use of parametric data were checked to ensure normal distribution of data and homogeneity of variance. To complete the exploratory part of the analysis, one-way analysis of variance (ANOVA) was used to test for any interaction effect that gender and language might have on each variable of the learning environment under investigation. Then, descriptive statistics to summarise the data were computed; specifically, the characteristics of the six multi-item scales were considered, looking at students' perceptions of each in relation to their team experience. Inferential statistics using Pearson product-moment correlation coefficients ( $r$ ) were obtained to describe the association or relationship between the independent variables evaluated in the current research. Also, the correlation coefficients were used to assess any potential multicollinearity issues. Finally, two series of multiple regression analyses were carried out in order to test hypotheses developed to answer the three research subquestions for this strand of the research.

In relation to the qualitative or textual data collected from the two open-ended questions, participants' responses were analysed manually using the method of content analysis (Miles & Huberman, 1994). To begin with, the raw data was read through several times to obtain a sense of the whole and gain a clearer picture of the basic content of the text. All 484 comments were then coded and assembled into categories; a category can be summed up simply as a collection of content with similar meanings or connotations (Weber, 1996) or using the criteria of Patton (1987), categories are internally homogenous and externally heterogeneous. The latter definition means, technically, that no item should fit into more than one category; however, given the intertwined nature of human experiences, it is not always possible to create mutually exclusive categories when a text deals with experiences (Graneheim & Lundman, 2004). The coding process was guided by the use of 'prefigured' categories (based on the literature under study and the research questions) and emerging categories that enabled the author to pursue new concepts of inquiry (Creswell, 2007) later in Strand Two of the study. Data relevant to each category were then reexamined to ensure that each item 'fit' (Mayan, 2009). Next, key themes were identified and inferences made which, in turn, were used to corroborate the quantitative findings of the primary database.

Of note, the technique of content analysis was used also for analysing the data collected from the semi-structured interviews conducted in Strand Two of the current study.

#### **4.4.1.4 Evaluating the research design.**

Recognising that “conclusions drawn in the basis of analysis, regardless of how simple or complex, are contingent on the utility of the information on which the analysis is based” (Hardy & Bryman, 2009, p. 2), the author set about the following procedures for ensuring rigor or standards of evidence in the study.

##### *4.4.1.4.1 Reliability.*

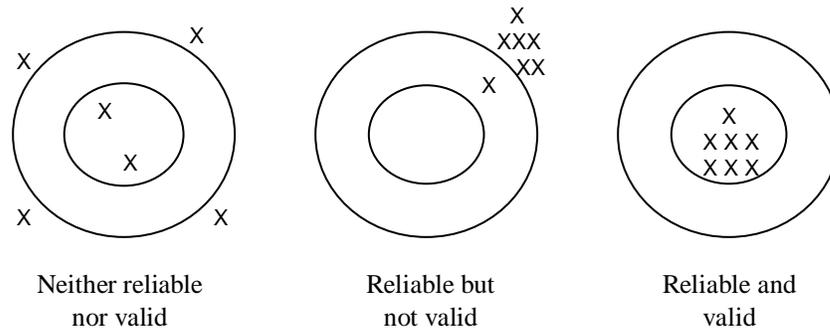
Internal consistency reliability for each of the six defined scales was calculated using Cronbach’s  $\alpha$ . Reliability coefficients for the statistical test range in value from 0 to 1 and though there is actually no lower limit to the coefficient, the closer Cronbach’s  $\alpha$  is to 1.0 the greater the internal consistency of the items in the scale (Cavana et al., 2000). In general,  $\alpha$  values equal to or greater than 0.6 are considered acceptable and 0.8 are good (Pennings, Keman, & Kleinnijenhuis, 2006); albeit many (e.g., George & Mallery, 2003; Nunnally, 1978) suggest that Cronbach’s  $\alpha$  should be at least 0.7 and some employ a figure of 0.8 to denote an acceptable level (Bryman & Bell, 2007). Notably, while a high value for Cronbach’s  $\alpha$  provides support for good interitem reliability, values of 0.95 or greater are not necessarily desirable as this indicates that some items may be entirely redundant (Gliem & Gliem, 2003). In terms of the student feedback instrument used in this research, values for Cronbach’s  $\alpha$  ranged from 0.6 to 0.9, thus indicating an acceptable reliability of measures.

##### *4.4.1.4.2 Validity.*

Validity, another important criterion in the evaluation of variables, refers to the accuracy or truthfulness of a measurement—it is concerned with the issue of whether or not a variable really measures what it is supposed to measure (Hardy & Bryman, 2009). Of important note, validity presupposes reliability but reliability is not a sufficient condition

for validity; this relationship is illustrated best by Cavana et al. (2000, p. 212) in Figure 16 below.

**Figure 16: Reliability and Validity in Target Shooting**



Of the several forms of validity, face and content validity were established; the former being achieved through items being presented on the student feedback questionnaire in a clear and understandable way to participants (Cavana et al., 2000) and the modified instrument from Ramsden's CEQ was administered on a large scale throughout the business school for about an eight year period (1999 to 2006). Content validity was attained in two ways: (i) from the literature; and (ii) the use of qualitative data that provided a supporting role to the primary database; recognised as methodological triangulation (Patton, 1990).

#### *4.4.1.4.3 Generalisability.*

Generalisability of findings to a larger population is permitted through the use of an adequate and random sample with normal distribution (Field, 2009; Morse, 1999). The research study of  $n = 319$  well exceeded the scientific guidelines for sample size decisions as recommended by Cavana et al. (2000) who indicated that a sample size of 196 individuals would have been acceptable. Graphical representations showing the normal distribution of the sample are presented in Chapter 5.

## **4.4.2 Strand Two - Qualitative Investigation**

### **4.4.2.1 Secondary research questions.**

In line with the research aims and objectives, Strand Two of the study relied on an explorative approach to focus on gaining a better, more nuanced understanding of how teamwork is conceptualised in both university and corporate settings as experienced by those directly involved; viz., undergraduate business students in their final semester before graduation and Australian employers.

The following secondary research questions were developed to meet the objectives in this strand of the study and to guide the research process:

*SQ<sub>4</sub>*: To what extent are students' and employers' conceptualisations of teamwork skills aligned?

*SQ<sub>5</sub>*: To what extent do employers' perceive a difference between graduates' teamwork skills expected before employment and those demonstrated once employed?

### **4.4.2.2 Data collection.**

#### *4.4.2.2.1 Student sample and procedure.*

The same cohort of students who had completed the student feedback questionnaire was invited to participate in face-to-face, one-on-one interviews with the author (see Appendix E). Again, it was felt that the soon-to-be graduated students were well positioned to offer detailed insights and opinions as to what constitutes successful teamwork in educational settings and the extent to which HE had prepared them for entry into career-ladder employment with respect to the development of teamwork skills. A total of 14 individuals were interviewed prior to saturation of information (Marshall, 1996; Morse, 2000); albeit, it is recognised that saturation may be somewhat artificial,

particularly from a pragmatist perspective, as new and unique information consistently enters the research, attesting that explanations, theory, meaning and so on is provisional.

#### *4.4.2.2.2 Employer sample and procedure.*

The employer sample comprised of 11 executives, from large- and medium-sized companies in Australia which actively employ business graduates for entry-level business roles, as well as hire graduates for their executive training programmes. Thus, research findings would be applicable directly to student recruiting efforts and the HE curriculum. Major sectors of business and industry represented in the sample included accounting, finance, human resources, information technology, public relations, management and marketing/sales.

Participants were sourced partly by using the resources of the business school's consultative committee and by major newspaper advertisements for graduates. Initial contact was made via telephone and, having communicated the purpose and significance of the study, those who expressed their willingness to participate were sent formal introductory and ethics clearance letters; the latter was a written commitment to confidentiality, de-identifiability of responses and information that participants could withdraw at any time without penalty (see Appendix F). Follow-up phone calls were made about seven days after mailing to confirm participation and to arrange appointments.

#### *4.4.2.2.3 Instrumentation and administration.*

A semistructured interview approach based on an interview guide or schedule was adopted in an effort to make comparisons within and across both student and employer groups in relation to the topics under study (Bernard & Ryan, 2010) and to capture the language used by individuals in the target population when discussing these issues (Forthofer, 2003). In particular, interview questions were specified and listed on a schedule to give a degree of coherence to the themes which emerged from the responses, yet were slightly flexible insofar as the sequence could be varied at the author's

discretion. This practice accords with Johnson and Turner (2003) and Thomas (2003) who emphasised that, during interviews, some participants will occasionally digress to other topics revealing valuable information that the researcher had not envisioned, and so it is advantageous to record what they have to offer, steering the conversation back to the list of questions only when a digression is clearly irrelevant.

Establishing rapport and trust with participants (Patton, 1990) was duly noted by the author and facilitated by commencing each interview with a standard introduction outlining not only the type of information required from interviewees but also what was expected of them (May, 2001). In addition, the author listened attentively to all responses and showed a genuine interest and respect in learning about participants' experiences; the author adopted the posture that it is *the respondent* who possesses the required information, thereby departing from the role of researcher as 'expert' (Barbour & Featherstone, 2000). The motivation of participants to respond and provide detailed answers was assisted also by the use of probes (Gorden, 1987) such as 'could you tell me a little more about that?'. To maintain impartiality during the interviews an attitude of neutrality was assumed so as to not affect respondents' answers (Backstrom & Hursh 1963; Patton, 1990).

The interview schedule for the student sample consisted of two sections (see Appendix G). *Section I* requested socio-demographic information. *Section II* addressed students' perceptions of the most important generic skills expected in new business entrants and conceptualisation of teamwork, specifically the individually-held teamwork skills needed for effective team member interaction and team performance, leading to team effectiveness. Within this section of the interview, participants were asked to identify critical incidents, describe experiences and provide answers to the reflective questions.

For comparative purposes, the interview schedule for the employer sample closely paralleled that used with student participants and also consisted of two sections (see Appendix H). *Section I* requested socio-demographic information. *Section II* focused on the most important generic skills expected in new business entrants and

conceptualisation of teamwork, specifically elements of an effective team, individually-held teamwork skills needed for effective team member interaction and team performance, and perceived deficiencies of graduates' teamwork competencies once employed. Respondents, as with persons in the student sample, were asked to identify critical incidents, describe experiences and answer reflective questions.

Interviews with both student and employer samples were conducted face-to-face and one-on-one and held at the location of a participant's choice. Most interviews with employers were carried out at their place of work during normal hours; though, on two occasions interviews with employers were held over the telephone which helped to overcome the distance to the participants and also allowed the author to access them at convenient times based on their work commitments. Interviews with students always took place on campus during daytime or evening hours. With both sample groups, interviews typically lasted for approximately 45-60 minutes and all participants cooperated by making sure that they were not disturbed during the interview. Interestingly, the majority of employers displayed a willingness to continue talking on the subject matter even after all questions on the schedule had been covered.

Interviews with both sample groups were audio-recorded and later transcribed verbatim to generate rich and contextualised data (Hardré & Sullivan, 2008; Panchanadeswaran & Koverola, 2005). To protect participants' identity, interviews were coded by number; that is, S1 to S14 and E1 to E11 for students and employers, respectively. Detailed field notes written during and immediately after interviews also provided useful data, quality confirmation and helped in strengthening the rigor and validity of the inquiry analysis (Morse, 2000).

#### **4.4.2.3 Data analysis.**

As an iterative process, the analysis of the interview data served a two-fold purpose: (i) it prevented a bottleneck of data waiting to be organised and prepared for analysis; and (ii) it permitted the author to pursue emerging avenues of inquiry in greater depth in subsequent interviews (Pope, Ziebland, & Mays, 2000).

The initial transcription of each participants' interview generated approximately fifteen A4 pages of closely typed (i.e., verbatim) text data. Then, through a series of systematic steps, as set out by Miles and Huberman (1994), the content of the interviews was analysed manually to identify and categorise word/phrase frequencies and dominant patterns in the data to facilitate understanding. The process was assisted by the use of a coding scheme, informed from the texts as a whole and from the collation of responses to the structured interview questions. The justification for this activity was the need to recognise instances of information categories that could be retrieved to identify key themes from which inferences could be made. In other words, the well-structured coding scheme helped set the stage for data interpretation through the categories and then the themes to allow the author to make overall conclusions about the research (Mayan, 2009).

Categories were judged according to Patton's (1987) suggested standards of internal homogeneity and external heterogeneity. However, in some instances, items were illustrative of more than one category and, therefore, were sorted accordingly into two categories. Of note, there were a few items that did not 'fit' with the other data, commonly referred to as negative or deviant cases (Pope et al., 2000) and, in such instances, they were categorised as 'miscellaneous'. Nevertheless, key themes were developed and inferences made with respect to the secondary research questions developed for the Strand Two of the study.

#### **4.4.2.4. Evaluating the research design.**

It is acknowledged that researchers undertaking qualitative inquiry should approach criteria for ensuring rigor differently from quantitative researchers. Some qualitative researchers (e.g., Altheide & Johnson, 1998; Leininger, 1994; Smith, 1984) have rejected the framework of rigor, while others (e.g., Eisenhart & Howe, 1992; Finlay, 2006; Guba & Lincoln, 1981; Richardson, 2000) have argued for the use of different terminology when speaking about rigor; analogous to 'trustworthiness' in qualitative discourse. Terms such as 'credibility', 'transferability', 'dependability' and 'confirmability' have been proposed to reframe the terms reliability, validity and

generalisability. Mayan (2009) indicated that the key premise for this being that, because qualitative and quantitative research are traditionally associated with different paradigms, different criteria for evaluating research are needed within each paradigm.

For instance, the establishment of reliability for a given study typically rests on replication, assuming that equivalent research will yield similar results by the same or a different investigator. However, LeCompte, Preissle, and Tesch (1993) contended that, at best, reliability in qualitative research can only be approximated. As Popay, Rogers, and Williams (1998) emphasised, each researcher engaged in qualitative inquiry will impose some degree of reflexivity when accounting for an event or experience—one of the strengths of qualitative research lies in its ability to provide in-depth descriptions. Therefore, applying the quantitative rules of rigor to qualitative research can be deleterious when determining if standards of evidence have been achieved or not. Yet Mayan (2009), drawing on work of Applegate and Morse (1994), asserted that it is highly plausible for replication to exist in qualitative inquiry, coming through as repetition or duplication within the same data set; otherwise known as saturation.

An alternative to the ‘literary rigor debate’ is to *reconceptualise* the conventional terms reliability, validity and generalisability through a qualitative lens, a position argued by Morse, Barrett, Mayan, Olson, and Spiers (2002) and adopted by the author. Accordingly, the procedures carried out for establishing rigor in the second strand of the study are discussed below, recognising that verification strategies are exhaustive in the extant literature. Also, because the research in this strand of the study was iterative and cyclical rather than linear, the author was able to move back and forth between design and implementation to ensure congruence among the various components of the design itself (i.e., question formulation, literature, methodology and so on). This pacing or moving between what was known and what one still needed to know was essential for both meeting the actual purposes of the research and building reliability and validity by ensuring rigor. In this way, new ideas and recommendations for future research were identified.

#### *4.4.2.4.1 Reliability.*

Other procedures used by the author to ensure that reliability were inherent in the research process are as follows:

1. The research design and processes by which data have been collected and analysed were transparent (Popay et al., 1998; Yin, 2003).
2. To minimise researcher bias during interviews, every effort was made to adhere as closely as possible to participants' own words (Knafl, Webster, Benoliel, & Morse, 1988).
3. Transcripts were checked to ensure that there were no missing words or phrases made during transcription that otherwise could have subverted the analysis (Poland, 1995).
4. The risk of drift in the definition of codes was prevented by constant comparison of data with the coding scheme (Creswell, 2009; Miles & Huberman, 1994).
5. Intercoder agreement (or cross-checking) was satisfied (Krippendorff, 2004). The process involved the random selection of six passages of text that were coded independently by two raters and then codes compared and refined until consensus was reached.

#### *4.4.2.4.2 Validity*

In terms of validity, three types were especially relevant to qualitative research; namely, descriptive, interpretative and theoretical validity (Maxwell, 1992). These are important because credible reporting or portrayal of what was observed and interpreted of participants' perspectives and experiences are primary qualitative activities to what was being studied by the author (Creswell & Miller, 2000; Johnson, 1997).

To enhance validity, as recommended by Creswell (2009), throughout the entire research process multiple strategies were used and implemented (in addition to those detailed

earlier; e.g., use of probes, interview schedule, researcher reflexivity and negative case analysis). For example, in-depth and recursive interviewing allowed the author to regularly compare the validity of both sample groups' perceptions and understandings of teamwork and the skilful practice thereof, so that tentative conclusions (Kirk & Miller, 1986) could be drawn. To minimise discrepancies in responses, each interview was audio-recorded and transcribed verbatim, as stated earlier. This permitted the author to use low-inference descriptors; that is, the use of precise (i.e., direct quotation) and rich detailed descriptions phrased closely to participants' accounts and the researcher's field notes (Johnson, 1997). Further, three types of triangulation (Patton, 1990) were used to build a coherent justification for themes and to help gain an understanding of the phenomena under study, adding to the validity of the research (Creswell, 2009). Triangulation methods included: (i) data – the use of a variety of sources; in this case, students and employers; (ii) investigator – two code-raters assisted with refinement of the coding scheme; and (iii) methodological – the research design was MM comprising of quantitative and qualitative approaches. Attending to validity throughout the research process was done also by means of engaging in peer review (Guba & Lincoln, 1981).

#### *4.4.2.4.3 Generalisability.*

With respect to generalisability, participants were selected purposively to capture a range of experiences with the phenomenon (teamwork) so that theory or understanding of the event broadly and in depth could be developed. Morse (1999) explained that this kind of selecting ensures that the resulting theory or representation is comprehensive, complete, saturated and accounts for negative cases and, because of that, knowledge gained from the theory should fit other scenarios that may be identified in the larger population. The theory also is applicable beyond the immediate group who participated in this research, for knowledge gained is not limited to demographic variables; it is the fit of the topic, its comparability with the problem that is of concern. In other words, it is the knowledge that is generalisable.

## **4.5 Pilot Study**

With respect to **Strand One** of the study, it was decided that piloting the student feedback instrument for the purposes of the research was not necessary given that use of the survey was well established in the business school. Conversely, in relation to **Strand Two**, a similar but much smaller study was completed as a pilot study using two final-year business students and one employer to assess the research instrument and to ensure that the method of data collection was workable and acceptable to prospective participants. Following the pilot interviews, minor modifications were made in terms of clarity of questions and the overall sequence of the interview schedule questions. As emphasised by Patton (1990, p. 295), “the way a question is worded is one of the most important elements determining how the interviewee will respond”. The pilot work did confirm that the interview schedule was well designed and could be employed in the current research with confidence.

## **4.6 Ethical Considerations**

Full ethics clearance was obtained from the Human Research Ethics Committee (HREC) of the University. At all stages of the research study participants volunteered to be recruited. No incentives were provided for participation in the research; however, a token of appreciation was given to each respondent at the conclusion of interviews held as part of Strand Two of the investigation. Aspects within the ethics proposal accepted by the HREC covered key ethical issues, as discussed below.

### **4.6.1 Informed Consent**

All study participants volunteered to be participants with informed consent obtained through written documentation. This meant that all pertinent processes used to gather and analyse the data, and to present the findings generated were clearly and accurately described prior to participation. The information sheet provided participants with an overview of the research purpose, methods, demands, participant rights, risks and benefits along with the contact details of the author and her supervisor to whom further

inquiries could be directed. All participants were informed that their views would remain strictly confidential and that information regarding their participation would not be disclosed to anyone at any time during the study.

#### **4.6.2 Confidentiality**

The recruitment process in the study was designed to ensure the privacy of potential participants' details. All participants who consented to be involved were assigned a participant number, which appeared on his or her data collection file. The decoder of the information was kept in a secure location, separate from the data files. Data obtained from participants was used only for research purposes. No individual was identifiable when reporting the findings and only aggregated results were reported. Complete confidentiality has been ensured in any publications or presentations that arise from this research and no personal details will be published.

#### **4.6.3 Data Storage**

Data collection forms were filed in a locked cabinet and stored at the Higher Degree by Research Office for a minimum of five years after research completion.

### **4.7 Chapter Summary**

Chapter 4 provided details as to how the multistrand, MM study was conducted. The research aim and objectives were addressed, along with the research approach. A description of the research design was presented; particularly, the development and application of the MM strategy of inquiry. Next, a comprehensive explanation of the research methods, including analyses techniques utilised for each separate strand of the study, were documented. Then, procedures for evaluating the research design (i.e., reliability, validity and generalisability) were clearly outlined so as to increase the transparency by which data were collected and analysed. Finally, details of the pilot study and ethical considerations were reported. In the next chapter, the results of the quantitative data analyses will be presented and discussed.

## CHAPTER 5

### QUANTITATIVE RESULTS AND DISCUSSION

As knowledge increases among mankind, and transactions multiply, it becomes more and more desirable to abbreviate and facilitate the modes of conveying information from one person to another, and from one individual to many (Playfair, 1801/2005).

#### 5.0 Introduction

Chapter 5, which is organised in two main parts, contains an inclusive presentation and discussion of results of the empirical analyses that were conducted to evaluate the hypotheses and answer the secondary research questions developed for Strand One of the current study.

First, in Part One of the chapter, the psychometric properties of the research instrument are reported, followed by the diagnostics exploring the statistical assumptions underpinning parametric data. Then, the descriptive statistics that summarise the data are presented. Specifically, the characteristics of the six multi-item learning environment scales are considered, looking at students' perceptions of each in relation to their team experience. Next, the correlation matrix is reported so as to provide information on the association between the variables evaluated in the research study and assess potential multicollinearity issues. Finally, the results of the multiple regression analyses conducted to examine the testable hypotheses are addressed.

In Part Two of the present chapter, findings of the survey are discussed in relation to the literature reviewed in Chapter 2, the research questions developed for Strand One of the study and the hypothetical model (Chapter 3), as derived from literature. Next, an 'interim research outcomes model' is devised and presented against the hypothetical model developed in Chapter 3. Recommendations for practice are provided throughout the discussion. Then, a final summary is made of the chapter.

## 5.1 Part One - Presentation of the Results

### 5.1.1 Psychometric Properties of the Research Instrument

All questionnaires, regardless of what they measure, must demonstrate good performance with regard to psychometric properties (Zach, 2005). The research instrument used in this study is a modified form of Ramsden's (1991) Course Experience Questionnaire which consists of a set of validated scales available through the Department of Education, Science and Training in Australia (DEST), and is commonly and widely used within several Australian universities, including the Business School where the current research was undertaken. Nevertheless, to ensure reliability and that each scale in fact encapsulated a set of items predicted to measure each underlying construct, Cronbach's  $\alpha$  were computed. Table 4 shows that all constructs in the student feedback questionnaire met the minimum  $\alpha$  coefficient threshold of 0.60 and greater, thereby confirming the instrument as psychometrically robust. Also, qualitative comments elicited from respondents, viz., the two open-ended questions, indicates that each scale did assess topics of importance to tertiary students actively engaged in teamworking.

**Table 4: Reliability Analyses of the Learning Environment Constructs**

Construct	No. of Items	Cronbach's $\alpha$
Learning Community	5	.60
Intellectual Motivation	4	.77
Appropriate Assessment	3	.64
Appropriate Workload	4	.63
Good Teaching	6	.89
Clear Goals and Standards	4	.72

Note: Based on n = 319.

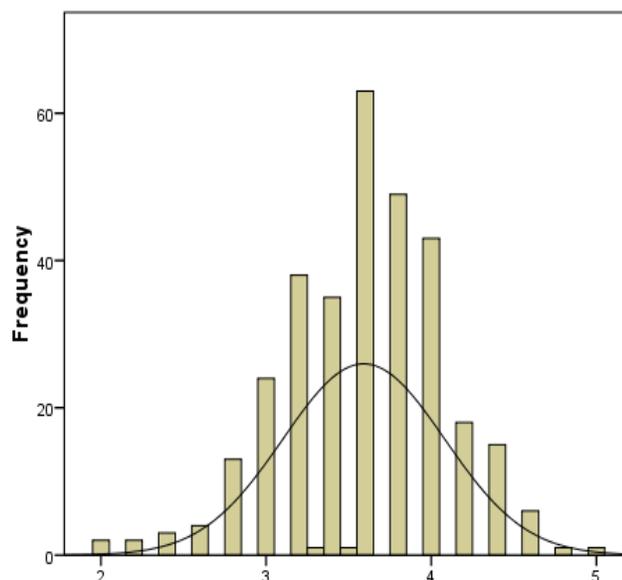
## 5.1.2 Assumptions Underpinning Parametric Data

### 5.1.2.1 Normal distribution.

Establishing normality, or otherwise, is necessary to determine whether parametric or non-parametric statistical tests should be used; use of parametric tests when the data is not parametric is likely to render inaccurate results. However, for the research study, from the large sample of 319 cases and what is known of the central limit theorem, it was evident that the sampling distribution was normal – regardless of the shape of the data actually collected and the population distribution in samples  $\geq 30$  (Field, 2009). Thus, parametric statistical tests were used in all instances.

Notwithstanding, to ensure that assumptions were met and for the tests to be accurate, the data for each variable of the learning environment evaluated in the research study were screened for normal distribution; viz., computation of histograms and box-whisker plots. Box-whisker plots were generated in addition to histograms to identify any outlier that may not have been detected well visually in the latter type of graph (i.e., histogram), but which has the potential to bias the mean and inflate the standard deviation (Field, 2009). Figures 17 and 18 graphically display the data with respect to ‘Learning Community’.

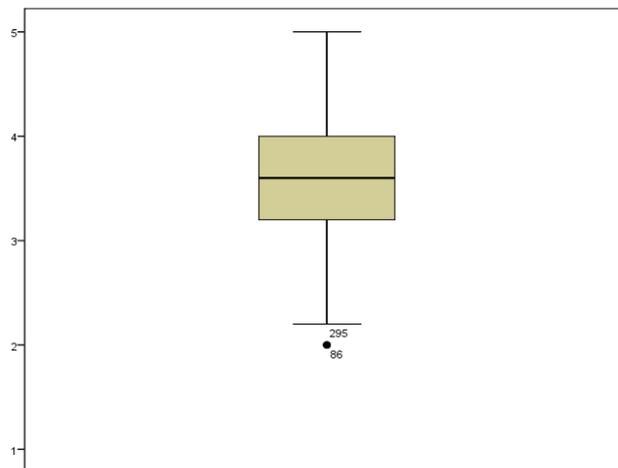
**Figure 17: Histogram of the ‘Learning Community’ Scores**



As can be observed in Figure 17, the data is distributed symmetrically around the centre of all scores. As such, if a vertical line were drawn through the centre of the distribution then it would look the same on both sides. Thus, the data with respect to ‘Learning Community’ is deemed to be normally distributed, characterised by the bell-shaped curve; as per the same criteria, data in relation to the remaining variables is deemed also to be normally distributed (see Appendix I).

With respect to Figure 18, two outliers can be spotted for the resulting boxplot generated for ‘Learning Community’. However, despite their presence, it can be observed that the distribution is symmetrical because the whiskers (i.e., the range of the top and bottom 25% of the scores from the highest and lowest edge of the tinted box, respectively) are the same length, thereby indicating again that the ‘Learning Community’ data is normally distributed and any conclusions drawn to reflect reality accurately can be done with a high level of confidence. The results for the remaining independent variables (see Appendix J) support the view that assumptions of normality are acceptable.

**Figure 18: Box-whisker plot of the ‘Learning Community’ Scores**



### **5.1.2.2 Homogeneity of variance.**

To complete the exploratory part of the analysis, one-way analysis of variance (ANOVA) was used to check for any interaction affect that gender might have on each

variable of the learning environment under investigation. Particularly, the ANOVA procedure supports the null hypothesis that, statistically speaking, there is no significant difference between the mean scores (of Learning Community, for example) of two independent groups (e.g., male and female) to be addressed. It has met the underlying statistical assumptions of independent groups, that the dependent variable is measured on at least an interval scale, and the data is normally distributed. It also assumes homogeneity of variance; that is, the variance across different groups is approximately equal. Advantageously, Levene’s test of homogeneity of variance is an in-built feature of ANOVA in SPSS thereby allowing both equality of variances and the comparison of means to be performed in one operation. Table 5 reports the results of Levene’s statistic for each of the learning environment variables, whilst a summary of the ANOVA results for the said variables are presented in Table 6; significance is at the 0.05 level (2-tailed). In addition, the measure of effect size, eta-squared ( $\eta^2$ ) is included within the context of the ANOVA results to describe the magnitude or degree of variance in the six variables accounted for by gender; values for eta-squared less than 0.20 evidence a weak association (Creswell, 2002).

**Table 5: Levene’s Test for Homogeneity of Variances**

Variable	Levene’s Test for Homogeneity of Variances	
	F	Sig.
Learning Community	.75	.40
Intellectual Motivation	1.00	.32
Appropriate Assessment	3.81	.06
Appropriate Workload	.65	.42
Good Teaching	1.34	.25
Clear Goals and Standards	2.01	.15

Note: Based on n = 319; n (males) = 151, n (females) = 168. Levene’s statistic is expressed as F. There are two degrees of freedom; df1= 1, df2=317. Significant at  $p \leq .05$  (2-tailed).

As revealed in Table 5, Levene’s test for homogeneity of variance was found to be statistically nonsignificant for the present analysis; therefore, the assumption of equal variances is tenable.

With respect to Table 6, of the six variables, gender only accounted for variance in the calibrated scores for Intellectual Motivation,  $F(1, 318) = 5.12, \rho < .05$  and Appropriate Workload,  $F(1, 318) = 8.63, \rho < .01$ . However, the eta-squared values (of Table 6) show the strength of the association or proportion of variance in the six variables due to the students being male or female to be 20% or less in all cases—the effect of gender is weak.

**Table 6: Summary of ANOVA in the Six Learning Environment Scales accounted for by Gender**

Variable		Sum of Squares (SS)	F	Sig.	$\eta^2$
Learning Community	Between groups	.00	.001	.98	.00
	Within groups	78.54			
	Total	78.54			
Intellectual Motivation	Between groups	2.34	5.12*	.02	.02
	Within groups	148.00			
	Total	150.34			
Appropriate Assessment	Between groups	1.97	3.63	.06	.01
	Within groups	172.38			
	Total	174.35			
Appropriate Workload	Between groups	3.22	8.63**	.004	.02
	Within groups	118.37			
	Total	121.60			
Good Teaching	Between groups	1.55	2.37	.13	.00
	Within groups	208.00			
	Total	209.55			
Clear Goals and Standards	Between groups	.172	.34	.56	.00
	Within groups	161.84			
	Total	162.00			

Note: Based on  $n = 319$ ;  $n$  (males) = 151,  $n$  (females) = 168. There are two degrees of freedom;  $df1 = 1, df2 = 318$ .  
 $*\rho \leq .05$  (2-tailed);  $**\rho < .01$  (2-tailed). Eta-squared is expressed as  $\eta^2$ .

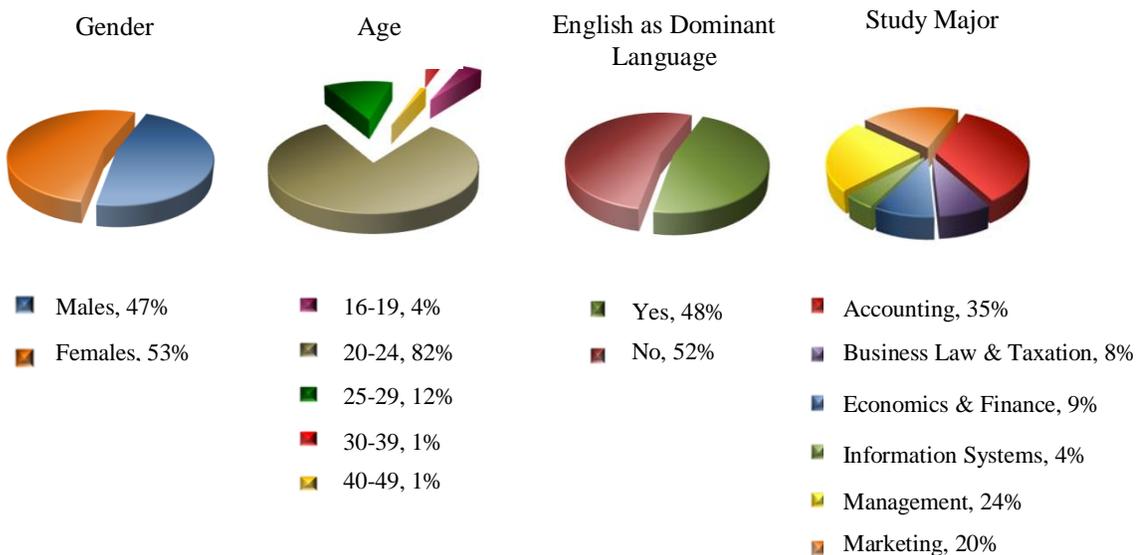
A second independent ANOVA was conducted to determine whether a difference was present in the variables of the learning environment as a function of language. The results of the analysis indicated that there was no statistical significant difference between the mean scores of the six variables and the two independent groups (i.e., English and non-English speaking background). Given that the analyses of the data revealed no statistical significant differences with respect to both gender and language the sample was combined for all subsequent analyses.

The next section presents the demographics of the research participants. This is followed by a closer consideration of the six variables, looking at students' perceptions of each in relation to their team-based learning experience.

### 5.1.3 Characteristics of the Research Participants

Questionnaires were distributed to 400 business students enrolled in their final semester of study in a BComm programme and completing the Capstone unit only. From this cohort, a total of 319 ( $n = 319$ ) valid responses were obtained, achieving a response rate of 80%. The demographic data, as represented in Figure 19, show that there was almost an equal representation of male ( $n = 151$ , 47%) and female ( $n = 168$ , 53%) participants.

**Figure 19: Demographics of Research Participants**



Also, just over one-half ( $n = 166$ , 52%) of participants were from a non-English speaking background (i.e., either students born outside Australia and whose permanent home is now in this country, or international students who have come to Australia specifically to undertake tertiary studies). Further examination of the data revealed that participants ranged in age from 16 to 49 years old; 82 percent of which were in the age group of 20-24 ( $n = 262$ ). Additionally, the most popular study major or discipline undertaken was accounting (35%), followed by management (24%) and marketing (20%).

#### **5.1.4 Students' Perceptions of Aspects of the Learning Environment**

As stated in earlier chapters, the research instrument sought students' perceptions of their learning environment with respect to their team experience so as to help answer the three secondary research questions formulated for Strand One of the research study. Responses to items on the student feedback questionnaire were measured using an interval or 5-point Likert scale, with 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree or disagree*, 4 = *agree*, 5 = *strongly agree*. The constructs measured include: learning community, intellectual motivation, appropriate assessment, appropriate workload, good teaching and clear goals and standards.

In examining the data, whilst items are grouped together according to their respective scales for analyses, the scale itself was not identified on the questionnaire. The six Tables 7-12 that follow display the aggregated distribution of responses across each individual scale. Also, as an example of how qualitative data can reveal important and useful insights for quality improvement, provided in each section below are categorised comments from students on 'best aspects' and 'needs improvement' with respect to teaching and learning. To facilitate visual identification of such comments, *italics* have been used and 'voices' are separated by the use of quotation marks.

#### 5.1.4.1 Learning community.

Table 7 reports the aggregated distribution of responses to the five questions measuring students' perceptions of a 'Learning Community'.

**Table 7: Students' Perceptions of a Learning Community**

Variable	Aggregated Distribution of Responses (%)				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
<i>Learning Community</i>	2.2	6.6	31.9	48.8	10.5

From the results in Table 7, it can be observed that 59% of students positively perceived that a learning community had been established. This concept is widely affirmed by students who expressed collective responsibility for learning, connectedness or learning by belonging, learning by doing, and shared knowledge and experiences as their main reasons. The themes are reflected by the following comments:

*“It seemed like everyone in my team felt responsible for making sure that each of us understood the material from each other’s area. I got to learn some principles of accounting which I actually enjoyed”.*

*“I was really motivated to do well in the unit because I felt like I was a part of something bigger. My class was like a family almost, it was like we really cared about each other ... everyone was interested in how we were coping from week to week”.*

*“I got to increase my knowledge of other areas of business and management because my team members were from different majors ... this was really good because it’s similar to real corporations. I can now appreciate what ‘doing’ business must be like in the real world”.*

*“Everyone in my team was committed to achieving the goal we had set. Our tutor [staff member] also helped us with this because we could approach him at any time, even outside of class hours, to talk about the difficulties we were having or just about the project in general”.*

*“It was easy to learn different concepts because my teacher [staff member] encouraged us to openly share our ideas during class, including the problems we were having. We often had debates in class about how we might do things differently so we could improve for the next round”.*

However, analysis of students’ comments also revealed concerns indicating that the classroom was not operating as a learning community. Emerging themes evidenced a clear lack of supportive relationships between staff and students. There was also an emphasis on ‘self-confinement’. That is, rather than embracing the opportunity to learn something about a different area or specialty of business, a number of students were firmly self-affiliated or -confined to their particular study major. Categorized comments in support of these themes include:

*“The lecturer [staff member] really didn’t have a clue about the project we were doing. As my lecturer I expected her to provide some kind of leadership but she just fumbled along ... she couldn’t offer us any real help or support at all. How are we supposed to learn this stuff if she doesn’t even know it? What a joke”.*

*“I don’t think our lecturer [staff member] was very professional at all because whenever students asked him questions or asked him for directions he just kept saying that we have to figure it out for ourselves ... it’s not like we were asking him for the answers or anything ... we just wanted reassurance that we were going ok”.*

*“I should not have to take this unit. I am majoring in economics and I really don’t care about learning other areas of business, especially management. This experience will not contribute at all to my future career and was basically a waste of time”.*

#### **5.1.4.2 Intellectual motivation.**

The ‘Intellectual Motivation’ scale consisted of four items measuring the level of intellectual change, stimulation and motivation. It was anticipated that students would perceive the team task to be intellectually challenging given that were required to synthesise and apply their knowledge, skills and understandings attained over the duration of their degree programme to managing a virtual company while reacting to the

moves of their competitors. Table 8 reports the aggregated distribution of responses to the four questions measuring students' perceptions of 'Intellectual Motivation'.

**Table 8: Students' Perceptions of Intellectual Motivation**

Variable	Aggregated Distribution of Responses (%)				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
<i>Intellectual Motivation</i>	2.1	6.0	21.3	50.9	19.7

As can be observed from the results displayed in Table 8, the majority of students (71%) perceived that intellectual motivation was an important aspect of the learning environment that had been satisfied. The comments below endorse students' perceptions of the challenging nature of the learning experience:

*“It was a fun and exciting environment and because the project was challenging, practical and hands-on, I was motivated like I have never been before”.*

*“It was motivating and actually interesting to be involved with managing a real company. It was totally a worthwhile experience because it helped me understand what a real business looks like and the importance of working in a team”.*

*“I found the project really interesting and challenging because I was finally putting into practice what I'd learnt over the years”.*

Yet, despite this widely-held perspective, a small percentage of students (8%) mainly felt that the learning experience was either “*too intellectually challenging*” or “*too easy*”. Another shared perception was that the project required too much comprehension or understanding of material from one specific area of business, leaving those students from other study disciplines feeling negative about the learning experience itself:

*“Because I didn’t study finance I didn’t really understand what was going on [and] after a while I just switched off from the whole project like some of the other students from my major ... we were intellectually isolated rather than motivated. This was an awful experience and a disappointing way to end my final semester”.*

### 5.1.4.3 Appropriate assessment.

Table 9 reports the aggregated distribution of responses in relation to the three items measuring students’ perceptions of ‘Appropriate Assessment’.

**Table 9: Students’ Perceptions of Appropriate Assessment**

Variable	Aggregated Distribution of Responses (%)				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
<i>Appropriate Assessment</i>	2.4	11.8	31.3	35.9	18.6

As revealed in Table 9, the results indicate that only 55 percent of students perceived the assessment as appropriate. Notably, students were divided as to what they considered to be a fair and appropriate assessment structure, as some students reported an appreciation of a unit that did not have exams while others actually preferred examinations. These themes were reflected in the following comments:

*“There was not so much pressure in terms of assessment. I liked that there was no exam”.*

*“There was too much emphasis on group assessment. I think there should have been a final exam so we didn’t have to rely on our team members to get a good grade”.*

*“There were too many small assessments worth 5% and 10% which is redundant ... it’s too easy to lose valuable marks [and] not all assessments were relevant to the unit”.*

A number of students reported also their belief that there were inconsistencies with the marking or grading of assignments, with some students requesting greater transparency; viz., a marking template or rubric. Students’ written comments supporting this perspective included:

*“Explain clearly what is required of us for assignments. At least give us a marking guide so we know what to include”.*

*“I think lecturers [staff members] need to be more accountable for their marking of assessments. Students need to know clearly what they are expected to include so they can achieve”.*

*“All the tutors/lecturers have different requirements in regards to assignments. There is no uniformity”.*

#### **5.1.4.4 Appropriate workload.**

Table 10 presents the aggregated distribution of responses regarding students’ perceptions of ‘Appropriate Workload’. The scale consisted of four questions measuring the appropriateness of workload in terms of the volume of work, time given to understand the material, and pressure experienced due to the amount of work required.

**Table 10: Students’ Perceptions of Appropriate Workload**

Variable	Aggregated Distribution of Responses (%)				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
<i>Appropriate Workload</i>	3.1	20.9	39.5	30.6	5.9

As can be observed in Table 10, only a small percentage of students (37%) perceived the workload to be manageable. Interestingly, a greater percentage of students (40%) neither agreed nor disagreed, suggesting that the fulfilment of other aspects of the learning environment may have provided some sort of counterbalance to the effect of high workload.

For example, a considerable number of students' written comments indicated a positive relationship between workload and team commitment, along with an awareness of work demands and expectations in the 'real' business world. These associations are reflected in the comments below:

*“Even though this project involved much more work than any of my other units, it motivated me to work as part of a team. It was fun and exciting and seeing our company perform well was worth the effort”.*

*“If there wasn't so much work involved then I may not have learnt how to work with complete strangers from different cultural backgrounds like in the real world”.*

*“I think the amount of work that's required of students for this unit gives us a realistic indication of what's expected in the real business world”.*

In terms of dissatisfaction in relation to workload, the most widely held concerns among students were of the time given to understand the amount of work required and of the lack of teacher support with helping students cope under the burden of work. This latter perspective, allied also with good teaching, is best illustrated by the following comment:

*“There was a huge amount of work involved with this unit. My team spent a lot of time outside of class working things out [and] we all have jobs and families. The work could have been easier if our lecturer [staff member] was more organised and willing to provide some support ... class time was unhelpful and unproductive. She [staff member] didn't care if we sank or not”.*

#### **5.1.4.5 Good teaching.**

Table 11 over page reports the aggregated distribution of responses to the six items measuring students' perceptions of 'Good Teaching', which may be considered analogous to 'expert coaching'. Specifically, questions comprising this scale related to motivating transactions between teacher and students, and educators' capacity to scaffold learning by providing quality feedback and clear explanations of content.

**Table 11: Students' Perceptions of Good Teaching**

Variable	Aggregated Distribution of Responses (%)				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
<i>Good Teaching</i>	6.1	15.0	31.7	39.3	7.9

From the results displayed in Table 11, it can be seen that less than one-half of students (47%) perceived their learning environment to evidence good teaching. Notably, a slightly smaller percentage of students (32%) responded as neither agree or disagree, suggesting that the fulfilment of other key aspects of the learning environment may have offset perceptions of mediocre or poor teaching quality. However, the results strongly indicate that there were both challenges and successes with teaching quality.

From an examination of students' qualitative comments, the dominant criticisms or concerns identified were with respect to teachers' organisational and communication skills, delivery of subject content and creditability of subject content, and the level of rapport and engagement with students' learning, including also the level of academic support. These themes are best endorsed in students' comments below:

*"I don't think the lecturer/tutor [staff member] spent much time planning and organising the unit. He seemed uncomfortable when asked questions. It was like he just couldn't connect with us".*

*"The tutor [staff member] should give more practical and real-life examples to help us understand the unit better and so that we can see the relevance of what we're learning to our future careers. The tutor needs to work harder at helping us make that connection otherwise what we're doing here just seems like all fun and games".*

*"It felt like we were on our own in class because the tutor [staff member] couldn't explain ideas clearly. I felt he lacked the knowledge and understanding to help students".*

*“My lecturer [staff member] actually seemed quite disinterested in teaching this class. In fact, I would even say that he was disinterested in us as students. It was almost like he thought that students working in teams meant that he didn’t have to interact with us ... sure our team worked really well together but that’s not the point ... lecturers should encourage their students and help make us excited about what we’re learning”.*

In addition, there were a number of students who expressed frustration over the regularity and quality of performance feedback. For example, one student noted:

*“It has taken the tutor 4 weeks to mark 25 papers and there was little feedback. Tell me what I should have done in order for me to do better!”.*

Contrary to students’ perceptions of poor teaching quality as evidenced above, those students who positively evaluated their exposure to good teaching reported that the lecturer or tutor (i.e., teaching staff) showed a ‘genuine concern’ toward their learning and a ‘timely willingness to assist’ when they were experiencing difficulties with either the content or with fellow team members:

*“I wish more of my professors [staff member] were like my current one. He related what we were learning in class to how we might apply it in the real business world once we graduate. I appreciated his style of teaching because he got involved and was willing to interact with us ... he respected us and treated us like junior business colleagues rather than as undergrads”.*

*“Our tutor was really concerned with helping us understand the material and what was required of us to succeed with the project. He asked serious questions and was sincere in answering our questions ... he didn’t talk down to us and was always ready to have a laugh”.*

*“Not everyone in my team was contributing equally or showing up to the scheduled meetings. After we discussed the situation with our tutor [staff member], there was a huge improvement in all of my teammates. This turn-a-round wouldn’t have been possible without the tutor’s commitment and willingness in helping us work better together. She helped us to identify the issues at hand and how to resolve our conflict in a respectful and productive way”.*

#### 5.1.4.6 Clear goals and standards.

Table 12 below reports the aggregated distribution of responses to the four items measuring students' perceptions of 'Clear Goals and Standards'.

**Table 12: Students' Perceptions of Clear Goals and Standards**

Variable	Aggregated Distribution of Responses (%)				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
<i>Clear Goals and Standards</i>	4.3	19.8	25.2	43.6	7.1

As can be observed from Table 12, the results indicate that just over one-half of students (51%) perceived their learning environment to evidence clear goals and standards, compared to almost an equal percentage of students who either disagreed (24%) or were undecided (25%).

From an examination of students' qualitative comments with respect to goals and standards, the majority of responses emphasised the need for improvement. The two major themes that emerged were students' reliance on their lecturer (or tutor) for clear explanation of the team project and its beneficial outcomes, as well as explicit instructions pertaining to assessment—even though all students held a copy of the Capstone workbook containing critical learning support material and the unit outline detailing the learning outcomes and activities, assessment tasks and (supposedly) the assessment criteria for measuring achievement of learning outcomes. The comments below are representative of students' dependence on teaching staff for guidance and overt communication of information with respect to establishing clear goals and standards:

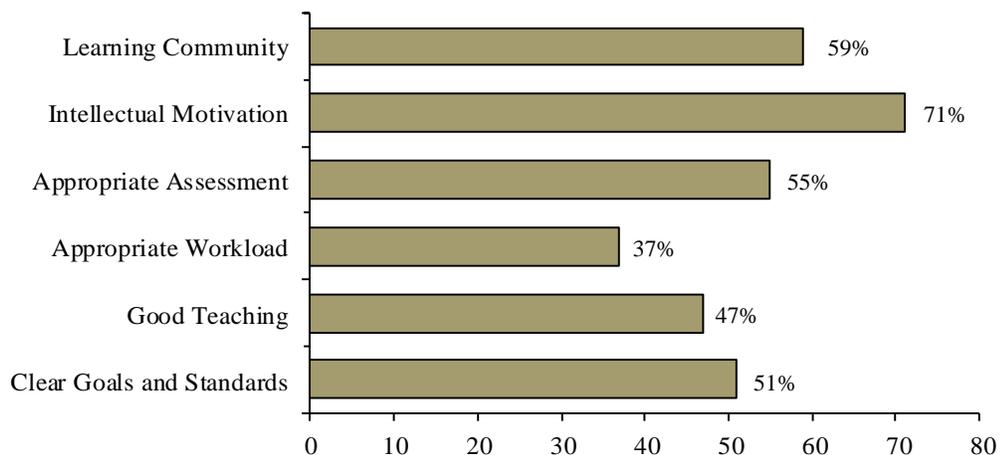
*“Luckily I’m Australian so English is not a problem for me, but other students in my team were from overseas and experienced real difficulties in understanding the material and what they were supposed to be doing. More guidance and better explanation is needed”.*

*“I know the handbook contained most of the material, but not everyone got the chance to read it or even understand it in time for the next class. This happened a couple of times to everyone in my team because we all have jobs and commitments outside of uni that take up a lot of time. Lecturers need to realise this and be more understanding. They need to spend some time at the beginning of each class to explain what we’re going to be doing”.*

### 5.1.5 Summary of Students’ Perceptions of Aspects of the Learning Environment

For ease of reference, responses in favour (i.e., agree/strongly agree) were collapsed for all six scales measuring students’ perceptions of aspects of the learning environment, as shown in Figure 20.

**Figure 20: Perceived Agreement of the Learning Environment**



As can be seen from the results in Figure 20, ‘Intellectual Motivation’ attracted the highest level of positive attention (71%), followed by ‘Learning Community’ (59%). There was a relatively small difference in percentages in the ‘Appropriate Assessment’ (55%) and ‘Clear Goals and Standards’ (51%) scales. Notably, fewer students perceived their learning environment to evidence ‘Good Teaching’ (47%) and an ‘Appropriate Workload’ (37%). With regards to the qualitative findings, students’ responses were mixed, highlighting both challenges and successes with each variable of the learning environment under investigation.

As Strand One of the current study was concerned with examining aspects of the learning environment influencing students' teamworking ability and their overall satisfaction with the team experience, the following section presents the data with respect to students' perceptions of these two deep-ended (dependent) variables.

### 5.1.6 Students' Perceptions of their Teamworking Ability Development and their Overall Satisfaction with the Team Experience

#### 5.1.6.1 Teamworking ability development.

Developing students' ability to work in teams was overtly targeted in the Capstone unit, especially as the project was conducted during a 13-week semester, with team assessment totalling 45% of a student's grade. Thus, teamwork was important to the individual student. Table 13 reports the distribution of responses to the item measuring students' perceptions of the development of their teamworking ability.

**Table 13: Students' Perceptions of their Teamworking Ability Development**

	Distribution of Responses (%)				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
<i>Teamworking Ability</i>	0	3.1	10.1	46.2	40.6

From the results displayed in Table 13, it can be seen that the vast majority of students (87%) perceived that their teamworking ability had been developed from active engagement in the Capstone project. With respect to students' comments, articulation of this widely-held perception was somewhat wide-ranging in the sense that several themes relating to team (e.g., composition, formation and norms of conduct) and individual (e.g., KSAs, self-esteem and preferred learning style) characteristics emerged from the data.

In relation to team characteristics, for example, students were predominately pleased with both the size of their teams and that membership had been determined by the lecturer prior to commencement of the class, as it is more representative of 'real' workplace situations; some students noted:

*"Finally, a unit where the lecturer had carefully assigned students to teams rather than doing it randomly or having us to pick our teams in adhoc way and then hoping for the best".*

*"It's more realistic having the lecturer form our teams because that is what it will be like in the real world ... we will have to work in teams with complete strangers rather than with our friends".*

Correspondingly, another student mentioned that:

*"Because of past experiences, I'm reluctant to working in teams. This time was different though as all of my teammates were motivated, enthusiastic and willing to contribute to their fair share of the work. I'm glad the lecturer decided our teams because I probably wouldn't have chosen those people to work with ... it's helped me to break down some of the negative stereotypes I had about students from other cultures".*

However, intermingled with students' positive reactions toward teacher-selection of team members were concerns of intolerance, inequality and a lack of cultural intelligence, as revealed in the following comments:

*"It was good that the lecturer selected the teams based on our majors, but better consideration was needed as to the 'mix' of students. There were two females in my team including myself and three males from \_\_\_\_ who were bossy, opinionated and sexist in their views and behaviour. I've had to work in teams with students from this country before and it was the same thing. When working in teams, overseas students need to be culturally aware of Australian/Western students just as much as we are of them".*

*"Most organisations expect you to work with other people and uni has partially helped me develop my teamworking ability; but, if you're inflexible in your attitude or not willing to compromise to fit the needs of the team, then it's unlikely you will make it very far".*

In relation to the overarching construct of individual characteristics, some students articulated that they learn best when working in teams because it provides them with an opportunity to actively contribute and communicate their ideas leading to a finished product that is superior than if completed as individuals. Also, there were comments that revealed a clear association between efficacy beliefs and perceived teamworking ability. These themes are evidenced as follows:

*“Working in a team environment is fun and enriching because it gives you the opportunity to get to know people from various disciplines and to transfer knowledge between members. The final assignment or project becomes that much better because of this collection of ideas and understandings”.*

*Team projects, like Capstone, boosted my self-confidence and helped develop my teamworking ability ... when some of my ideas were used, I felt like my team valued my contribution and that gave me added incentive to prepare for each week so not to let the team down”.*

However, it can be found that the quality of communication and feelings of trust among team members affects the quality of interactions:

*“I prefer teamwork over working by myself because it gives me an opportunity to be creative and discuss ideas with others who are in the same boat as me. But, I tend to only fully exchange my ideas and opinions with teammates whom I can trust ... I’m weary of teammates who are aggressive, stubborn and controlling ... who are fixed in their knowledge and position of how an assignment should be done.”.*

In addition, some students indicated that feelings of trust were important because they allowed team members collectively to determine the team goals and to stay focused on the project, as opposed to focusing on rivalries and individual goals that can foster conflict between and among team members. This theme is evidenced best by the following comment:

*“From the start, my team was very conscious about establishing trust so that as members we could share information about the project, set our goals and work together toward achieving those goals in a supportive and non-confrontational way. But, the team didn’t operate the same after a couple of members made decisions on their own bat. Although their decisions resulted in a win for the team and I still found the overall experience to be enjoyable, I was let down by their actions ... it was so supposed to a whole team effort. I definitely lost some respect and trust toward them”.*

From the previous comment, it is clear that some students perceived the maintenance of trust and honesty to be just as important as establishing and promoting it and that these were critical factors at play to promoting team and project success. Also, it can be interpreted that some students were more in tune or had a better understanding than others of the link between successful teamworking and positive interdependence.

However, contrary to expectations, while the majority of students (87%) perceived that their teamworking ability had been developed from engagement in the Capstone unit, there was little identification or articulation as to what individually-held KSAs contributed to their teamworking efforts. Also, some students were critical as to the actual nature of teamworking; particularly, What are teamwork skills?, Have they really been developed throughout the programme of study? and Can university effectively develop these skills?. These themes are evidenced in the following comments:

*“There were people in my team who were enthusiastic, good communicators, easy to get along with and who always showed up to team meetings, but they were kind of useless as teammates because they didn’t really do anything other than that. Teamworking is about more than being able to get along well with others isn’t it? I don’t think my lecturers [staff members] are completely accurate when they tell us that this is what teamworking is about. Surely our future employers are going to want more from us than what our lecturers are telling us?”.*

*“Everyone is telling me that teamworking is crucial to my professional career and team projects, like Capstone, will increase my ability and develop my teamwork skills. But what are teamwork skills anyway?”.*

*“I’m about to graduate and my instructors [staff member] still can’t tell me exactly what teamwork skills are ... it depends on who you ask. If they can’t agree on what teamwork skills are, then how are we supposed to have developed them”?*

*“Say I’ve worked really well in one team but not so in another, does that mean I’m deficient in my teamworking ability or that I have poor ‘teamwork’ skills”?*

*“I believe that a person’s ability for teamwork stems from their personality or attitude towards teamwork itself and this is something that university simply can’t develop in someone ... you either have good attitude or a bad one. And, even when someone does have a good attitude, it doesn’t necessarily mean that they’re going to be good team member”.*

From the previous comments and questions, it is clear that there exists a definite sense of frustration and confusion among some students as to the nature of teamworking and skill development. Arguably, students ought to be aware of how their studies are promoting skills transfer especially given the predominance of team projects throughout HE, and that the students purposively chosen for the current research, being in their final semester of study before graduation and seeking permanent, full-time employment were expected to know and have a firmer understanding of the individually-held KSAs that make for effective teamworking, which may not be the case for students in earlier years.

#### **5.1.6.2 Overall satisfaction with the team experience.**

The second dependent variable under examination was students’ overall satisfaction with the team experience. As discussed in Chapter 2 of the literature review, student satisfaction plays a critical role in learning and in the quality of learning outcomes. Also, it has been linked to higher learning performance and attrition rates. Table 14 presents the distribution of responses to the item measuring students’ reported satisfaction with their team experience.

**Table 14: Students' Perceptions of Overall Satisfaction with the Team Experience**

	Distribution of Responses (%)				
	Strongly disagree	Disagree	Neither	Agree	Strongly agree
<i>Overall Satisfaction with the Team Experience</i>	1.3	6.3	18.7	57.5	16.2

From the results shown in Table 14, it can be seen that the majority of students (74%) were satisfied with the team experience. In relation to the qualitative data consistent with the widely-held perception of team satisfaction, an analysis of students' comments did not yield any additional themes to those that have been detailed thus far in the present chapter.

### **5.1.7 Summary of Students' Perceptions of their Teamworking Ability Development and Overall Satisfaction with the Team Experience**

The empirical findings reveal that of the 319 students surveyed for purposes of the current research, an overwhelming 87 percent of students perceived that their teamworking ability had been developed and approximately 74 percent expressed overall satisfaction with the team experience.

As regards the qualitative student feedback data, it is the author's opinion that increasing the awareness and understanding of the processes that make for the 'skilful practice' of teamwork and the variables of the learning environment under which teams can effectively structure, support and lead their performance will prove beneficial to business students as they engage in collaborative activities as part of their studies in preparation for work in the business world.

Subsequently, for the purpose of this strand of the study, in order to identify what variables of the learning environment have any real or significant impact on students' teamworking ability and their overall satisfaction with the team experience, a more comprehensive analysis of the data was required. Hence, the next section reports the

results of Pearson product-moment correlation coefficients ( $r$ ) conducted to describe the association or relationship between the independent variables evaluated in the current research study. Also, the correlation coefficients were used to assess any potential multicollinearity issues. Then, presented in the following section are the results of the multiple regression analysis carried out in order to test hypotheses developed to consider the three secondary research questions for Strand One of the research as stated in Chapter 3.

### 5.1.8 Pearson Correlations

Table 15 reports the Pearson correlation matrix illustrating the means ( $M$ ), standard deviations ( $SD$ ) and correlation coefficients ( $r$ ) for the independent variables evaluated in the study.

**Table 15: Correlation Matrix for Variables of the Learning Environment**

Variable	$M$	$SD$	1	2	3	4	5	6
1 Learning Community	3.59	.50	—					
2 Intellectual Motivation	3.80	.69	.48**	—				
3 Appropriate Assessment	3.57	.74	(-.06)	(.01)	—			
4 Appropriate Workload	3.10	.62	.12*	.23**	.25**	—		
5 Good Teaching	3.28	.81	.50**	.42**	(-.07)	(-.01)	—	
6 Clear Goals and Standards	3.35	.71	.39**	.44**	.20**	.25**	.51**	—

Note: The mean and standard deviation are denoted as  $M$  and  $SD$ , respectively.  
 \* $\rho < .05$  (2-tailed), \*\* $\rho < .01$  (2-tailed) and ( ) indicates no correlation

As can be seen from the correlation matrix (Table 15), the results demonstrate four key features. First, all of the variables have a mean score greater than 3 (the scale midpoint), demonstrating students' satisfaction with all constructs measured and consistency with the descriptive statistics reported in the previous sections. The second feature of Table 15 is that the mean score for the variable 'Intellectual Motivation' is particularly high ( $M$

= 3.80), whereas the variable ‘Appropriate Workload’ has the lowest mean score ( $M = 3.10$ ). Third, inspection of the correlation coefficients show a number of significant associations between variables, with most variables correlated at the  $\rho < .01$  level (e.g., ‘Learning Community’ with ‘Good Teaching’,  $r = .50$ ,  $\rho < .01$ ). Hence, the reported correlations confirms that many of the relationships shown in the hypothetical model (Figure 13) are genuine and operating. Lastly, the results presented in Table 15 show that there are no excessively high correlation coefficients and, therefore, multicollinearity between the independent variables is considered nonproblematic in explaining the regression results; as a general rule, multicollinearity exists when the correlation coefficient exceeds 0.80 (Gujarati, 2003).

Although a univariate test such as Pearson’s correlation is useful insofar as it allows the expression of statistical relationships between variables, the correlation coefficients cannot be used to predict how much one independent or predictor variable affects the dependent or outcome variable (simple regression) or several predictor variables (multiple regression). To address this, multiple regression analyses were carried out, with the results reported in the next section.

### **5.1.9 Multiple Regression Results**

The models tested by the multiple regression analyses specified, *firstly*, student teamworking ability development, and *secondly*, student overall satisfaction with the team experience as the dependent variables. The independent variables examined were: (i) Learning Community; (ii) Intellectual Motivation; (iii) Appropriate Assessment; (iv) Appropriate Workload; (v) Good Teaching; and (vi) Clear Goals and Standards. The results are summarised in Tables 16 and 17, respectively.

#### **5.1.9.1 Predicting student teamworking ability development.**

With respect to Table 16 overpage, the results show that when the independent variables were regressed enter-method against the dependent variable, the six independent variables accounted for approximately 30% of the variance in the development of

student teamworking ability ( $R^2 = .29$ ). The analysis of variance shows the variance to be statistically significant ( $F [6, 312] = 12.64, \rho \leq .000$ ).

**Table 16: Multivariate Regression Analysis of Determinants of Student Teamworking Ability Development**

<u>Student Teamworking Ability Development</u>				
Independent variables/predictors	Predicted sign	$\beta_1$	t	Sig.
Learning Community	+	.21	3.32	.001
Intellectual Motivation	+	.38	6.07	.000
Appropriate Assessment	+	.10	1.90	.058
Appropriate Workload	+	-.12	-2.08	.038
Good Teaching	+	-.10	-1.50	.135
Clear Goals and Standards	+	-.05	-.80	.425
R-square ( $R^2$ )	.29			
Adjusted R square ( $R^2_{adj}$ )	.28			
F-value	12.64			
Significance	.000			

Note: The standardised beta coefficient is denoted as  $\beta_1$ .

t = relative importance of each variable

F-value = Independent variables explain the variation in the dependent variable

An examination of the individual predictors reveals that only three, ‘Learning Community’, ‘Intellectual Motivation’ and ‘Appropriate Workload’ made significant contributions to the development of student teamworking ability, independently of the other variables. Specifically, ‘Intellectual Motivation’ ( $\beta_1 = .38, \rho \leq .000$ ) is a stronger predictor of teamworking ability development relative to ‘Learning Community’ ( $\beta_1 = .21, \rho \leq .001$ ) and ‘Appropriate Workload’ ( $\beta_1 = -.12, \rho < 0.05$ ). The standardised beta values ( $\beta_1$ ) demonstrate consistency with the correlation findings of Table 15 and the two beta-positive values support hypotheses  $H_{1A}$  and  $H_{2A}$ , respectively. However, contrary to expectations, although ‘Appropriate Workload’ was found to be statistically significant, thus giving support to hypothesis  $H_{4A}$ , the standardised beta value ( $\beta_1$ ) for ‘Appropriate Workload’ indicates that it had an inverse and relatively small influence on

the criterion variable. Associations between the other three independent variables and the dependent variable were not confirmed ( $\rho > 0.05$ ); therefore, hypotheses H<sub>3A</sub>, H<sub>5A</sub> and H<sub>6A</sub> were not supported.

In relation to the importance of the predictors in the model (i.e., the degree to which each predictor affects student teamworking ability), the standardised beta coefficient value for ‘Intellectual Motivation’ indicates that as intellectual motivation increases by 1 standard deviation (.69), the development of teamworking ability increases by 0.38 standard deviations. Similarly, as the perceived presence of a ‘Learning Community’ increases by 1 standard deviation (.50), the ability for teamworking increases by 0.21 standard deviations. Conversely, the beta-negative value for ‘Appropriate Workload’ indicates that a 1 unit standard deviation change in the workload (.62) is expected to result in a negative 0.12 standard deviation change in the development of student teamworking ability.

#### *5.1.9.1.1 Assessing the regression model of student teamworking ability development.*

To answer the question of whether or not the model of Table 16 fits the observed data well, the maximum standardised residual value of 1.86 lies between the universal guidelines of what constitutes an acceptable value. Therefore, the model is deemed to be accurate; in a normally distributed sample, 95% of standardised residuals should lie between -1.96 and +1.96, 99% should lie between -2.58 and +2.58 and 99.9% should lie between -3.29 and +3.29 (Field, 2009). In addition, the regression model of Table 16 is deemed to be stable across the sample as the maximum value for Cook’s distance is 0.076; Cook and Weisberg (1982) have suggested that values greater than 1 may be a cause for concern.

In relation to whether the model of Table 16 can be used to make inferences outside of the sample, consideration of the adjusted R-square ( $R^2_{adj}$ ), a measure of the loss of predictive power or shrinkage in regression, shows its value to be very close to the observed value of R-square (in fact the difference between the values is  $.29 - .28 = .01$ ).

This means that if the model were derived from the population rather than from a sample it would account for approximately 1% less variance in the outcome. In other words, the cross-validity of the model of Table 16 is very good and therefore generalisable. Of note, because of criticism associated with the adjusted R-square value as derived by SPSS, cross-validation of the regression model was confirmed also using Stein's formula, as recommended by Field (2009).

### 5.1.9.2 Predicting students' overall satisfaction with the team experience.

Table 17 shows the results associated with the second regression model that was constructed to examine the affect that each variable of the learning environment has on overall student satisfaction with the team experience.

**Table 17: Multivariate Regression Analysis of Determinants of Student Overall Satisfaction with the Team Experience**

Independent variables/predictors	Student Overall Satisfaction with the Team Experience			
	Predicted sign	$\beta_1$	$t$	Sig.
Learning Community	+	.12	2.29	.023
Intellectual Motivation	+	.44	8.87	.000
Appropriate Assessment	+	-.02	-.50	.615
Appropriate Workload	+	-.02	-.49	.622
Good Teaching	+	.03	.62	.537
Clear Goals and Standards	+	.28	5.26	.000
<i>R</i> Square	.49			
Adjusted $R^2$	.48			
<i>F</i> -value	49.08			
Significance	.000			

Note: The standardised beta coefficient is denoted as  $\beta_1$ .

$t$  = relative importance of each variable

$F$ -value = Independent variables explain the variation in the dependent variable

When looking at the results in Table 17, it can be seen that the six independent variables account for almost 50% of the variance in overall student satisfaction with the team

experience ( $R^2 = .49$ ). Also, the analysis of variance shows the variance to be statistically significant ( $F [6, 312] = 49.08, \rho \leq .000$ ).

An examination of the individual predictors reveals that only three, 'Learning Community', 'Intellectual Motivation' and 'Clear Goals and Standards' made significant contributions to overall student satisfaction with the team experience, independently of the other variables. Specifically, 'Intellectual Motivation' ( $\beta_1 = .44, \rho \leq .000$ ) is a stronger predictor of satisfaction relative to 'Clear Goals and Standards' ( $\beta_1 = .28, \rho \leq .000$ ) and 'Learning Community' ( $\beta_1 = .12, \rho < 0.05$ ). These results are largely consistent with the correlations reported in Table 15 and support hypotheses  $H_{1B}$ ,  $H_{2B}$ , and  $H_{6B}$ , respectively. Associations between the other three independent variables and the dependent variable were not confirmed ( $\rho > 0.05$ ), therefore, hypotheses  $H_{3B}$ ,  $H_{4B}$ , and  $H_{5B}$  were not supported.

With respect to the importance of the statistical significant predictors in the model (i.e., the degree to which each predictor affects overall student satisfaction with the team experience), the standardised beta coefficient value for 'Intellectual Motivation' indicates that as intellectual motivation increases by 1 standard deviation (.69), overall student satisfaction with the team experience increase by 0.44 standard deviations. Similarly, the beta-value for 'Clear Goals and Standards' indicates that a 1 unit standard deviation change in clear goals and standards (.71) is expected to result in a 0.28 deviation change in satisfaction. Finally, as the perceived presence of a 'Learning Community' increases by 1 standard deviation (.50), there is increase in overall satisfaction with the team experience by 0.12 standard deviations.

#### *5.1.9.2.1 Assessing the regression model of student overall satisfaction with the team experience*

The model illustrated in Table 17 is shown to have an overall goodness-of-fit to the data as the maximum standardised residual value of 2.87 lies between the universal guidelines of what constitutes an acceptable value. In addition, the regression model of Table 17 is deemed to be stable across the sample as the maximum value for Cook's

distance is 0.085; as stated previously, values greater than 1 may be a cause for concern (Cook & Weisberg, 1982).

With respect to the generalisability of the model of Table 17, consideration of the adjusted R-square ( $R^2_{adj}$ ) shows its value to be very close to the observed value of R-square (the difference between the values is .01) which means that if the model of Table 19 were derived from the population rather than from a sample it would account for approximately 1% less variance in the outcome; the cross-validity of the model is very good and therefore generalisable. Cross-validation of the model depicted in Table 17 was confirmed also using Stein's formula, as recommended by Field (2009).

## **5.2 Part One - Summary**

In the current chapter presented thus far are the: (i) diagnostics exploring the statistical assumptions underpinning the use of parametric data; (ii) descriptive statistics that summarised the data, looking at students' perceptions of each in relation to their team experience; and (iii) the results of the empirical analyses that were conducted to evaluate the hypotheses and answer the secondary research questions developed for Strand One of the study.

The comments made accessible by means of the two open-ended questions (i.e., the 'best' and 'in need of improvement' aspects of the team-based learning experience) were used to gain a much clearer picture of exactly what students had in mind when making quantitative ratings of items on the questionnaire. Responses associated with each measured variable were mixed and somewhat wide-ranging. For example, some students argued that teaching staff were instrumental in facilitating their teamworking efforts while other students believed that this aspect of the learning environment was in need of improvement. Notably, and contrary to expectations, students offered little response as to what individually-held KSAs contributed to, or were essential for, the 'skilful practice' of teamwork. Also, responses emphasised a level of frustration and confusion with respect to the nature of teamworking itself, with some students questioning 'what

exactly are teamwork skills?’ and casting doubt on the assumption that these skills can be developed effectively within HE classrooms or, if teamwork skills have been developed, are they the skills that employers expect? Given these concerns, it is the author’s opinion that further work in this area is highly relevant, timely and in accord with employers’ relentless demand for business graduates equipped with a demonstrable ‘core’ set of teamwork skills critical for professional employment; hence, the aim and relevance of Strand Two of the current research.

With regards to the correlational analyses, the results summarised in the correlation matrix of Table 15 identified the broad spectrum of relationships between variables of the learning environment evaluated in the research study. However, to enable a more elaborate and precise understanding of the relative influence that each variable had on the criteria variables of students’ reported teamworking ability development and their overall satisfaction with the team experience, two series of multiple regression analysis were conducted. The results, summarised in Tables 16 and 17 showed both regression models to be statistically significant ( $\rho \leq .000$ ). Also, both models displayed an overall goodness-of-fit with the data and are generalisable—the models can be used to make inferences beyond the sample of data that has been collected. In relation to the six pairs of testable hypotheses proposed in Chapter 3,  $H_{1A}$ ,  $H_{2A}$ ,  $H_{4A}$ ,  $H_{1B}$ ,  $H_{2B}$  and  $H_{6B}$  were supported whereas  $H_{3A}$ ,  $H_{5A}$ ,  $H_{6A}$ ,  $H_{3B}$ ,  $H_{4B}$  and  $H_{5B}$  were rejected.

In the next part of the chapter, the key findings are discussed in relation to relevant literature, the secondary research questions used to guide this strand of the study and the hypothetical model established in Chapter 3.

## **5.3 Part Two – Discussion of Results and Recommendations**

### **5.3.1 Introduction**

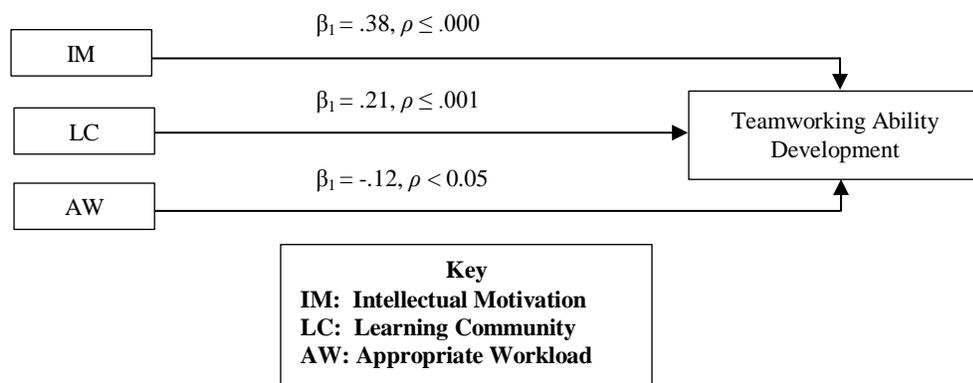
In Part Two of the current chapter, a summary of comparative analyses between the results and the literature, the research questions and the hypothetical model for the study is provided. Thereafter, an ‘interim research outcomes model’ is devised and presented against the hypothetical model developed in Chapter 3 as an explanation of the latest research findings in the discipline as found in the current research. Recommendations for improving educational practice are made throughout the discussion. Then, a final summary is made of the chapter, thereby bringing Strand One of the research study to a close.

### **5.3.2 Comparative Analysis with the Literature Review in Chapter 2**

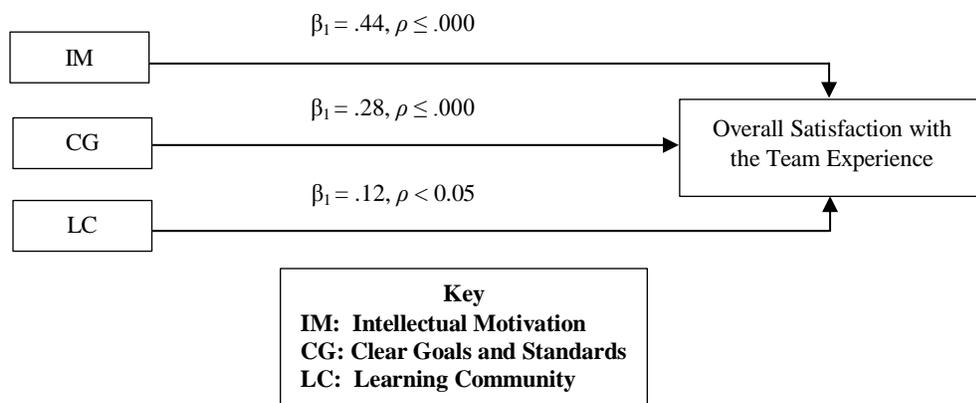
The majority of existing research concerned with promoting team effectiveness is based on organisational teams or teams in the K-12 educational system (Drury et al., 2002, Hartley, 2005). Consequently, despite the widespread use of teamwork, surprisingly little is known about how university students view this learning strategy in their classrooms (Phipps, Phipps, Kask, & Higgins, 2001). In order to fill the lacuna in this area of investigation, the main objective of Strand One of the present study was to gain an understanding of what business undergraduates perceive to be important for their team experience to be successful. Specifically, the author set out to examine the relationship of teacher-controlled variables of the learning environment; *firstly*, to students’ reported teamworking ability development, and *secondly*, to their overall satisfaction of the team experience, as outputs of team effectiveness. The intention was that insights drawn would inform the recommendation of a ‘best practice’ model of team effectiveness that could help deepen educators’ understanding of, and capacity to build, student teams so that the potential of students is supported and their needs met. In turn, graduates’ employability may be enhanced.

When comparing the empirical results found in Part One of this chapter with the literature review in Chapter 2, it can be determined that first, and foremost, multiple constructs of the learning environment which are under teacher control can, and do, influence both the development of students' teamworking ability and their overall satisfaction with the team experience. For ease of reference the complete set of significant relationships with respect to student teamworking ability and satisfaction are shown in Figures 21 and 22, respectively. These significant relationships are based on regression analyses and the associated regression coefficients (indicative of the strength of the relationship) as earlier detailed in the present chapter (pp. 131, 133 ).

**Figure 21: Significant Relationships based on Regression Analysis and Coefficients: Teamworking Ability Development**



**Figure 22: Significant Relationships based on Regression Analysis and Coefficients: Overall Satisfaction with the Team Experience**



With respect to **Figure 21**, the empirical findings demonstrate that only the higher order constructs of IM (an aggregation of intellectual change, stimulation and motivation) and LC were found to have a significant and positive influence on students' teamworking ability development. That is, students appear to be saying that the learning environments that will most strongly affect the development of their teamworking ability are those which are characterised by the application of theory to the type of activity which professionals in the field would engage in and by reciprocal interactions involving access to differing viewpoints that enrich intellectual exchange and inform thinking within an intrinsically motivating context.

This pattern of findings should not be surprising considering that the core tasks of the learning activity were carefully structured as meaningful and relevant pieces of work for which students had to marshal pertinent facts and integrate new ideas with what they already knew or use it to recognise what they thought they knew; such acts of intellectual processing (of constructing meaning or creating something new) are critical to learning (Smith & MacGregor, 1992). Furthermore, it makes intuitive sense that intellectual enthusiasm sustained by ensuring sufficient task complexity and quality of relatedness beyond the classroom encouraged students to participate more actively and legitimately in the team problem-solving which, in turn, had a net effect of increasing teamworking ability development.

Concomitantly, one might expect that the learning environment operating as a community mattered to most participants given that they were formally placed into interdisciplinary teams because of a shared interest or enterprise, that of managing a virtual company. Within this context, it stands to reason that being able to share, explore and draw on one another's knowledge, skills, experiences and so forth not only facilitated the co-construction and expression of collective meaning but also the coordination of team action processes, which consequently enabled students to complete the project successfully.

Further, participants' preference for engaging in authentic learner activities as part of, and within, a learning community may well represent their attempt at building capacity and learning for sustainability in today's technologically and knowledge-driven economy. In this context, capacity is understood to be a complex blend of motivation, skills, positive learning, infrastructure of support, organisational conditions and culture (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). Such a motive or purpose is consistent with increasing exhortations throughout recent literature for interdisciplinary practice as crucial to enable multiple perspectives and creative, rigorous and integrated responses to messy, unscripted 'real' world problems. As acknowledged by the Vice Chancellor of the University of Sydney, Professor Michael Spence: "the world around us never asks questions that come in neat disciplinary boxes, so we need to find ways of gathering people together around thematic work, without letting their methodological tools go soft" (Matchett, 2008, n.p.). In fact, many writers have concluded that separate academic discipline education does not foster interprofessional practice (Larson, 1995; McCallin, 2001) and is contrary to the concept of collectivity, which underpins teamwork (Berwick, 1996).

In the current study, the qualitative data clearly showed that the vast majority of participants valued the opportunity to participate in an interdisciplinary learning community and acknowledged that the positive benefits of such engagement is significant, contrary to research (e.g., Drury et al., 2002; Waite, Jackson, Diwan, & Leonardi, 2004) suggesting that many students do not want to work in teams and actively resent being forced to work in them. Also, with respect to team selection, this finding is important to consider because, while some (e.g., Bacon et al., 1998; Connerly & Mael, 2001; De Vita, 1999) have argued that students should choose their own teammates on the assumption that it may lead to better team dynamics and outcomes, this study found that *students* actually voiced their preference for teacher-appointed teams, as it mimics what they later will face in today's business environment where "peers are chosen more for their potential economic contribution to the team's purpose rather than for purely social comfort" (Wolfe & McCoy, 2008, p. 316). In relation to the valued-added benefits reported by participants, these included: greater appreciation for

other areas of business; openness to diversity; strengthened collegiality overall; increased desire to communicate effectively so as to be understood and nurture affiliation with others; and increased levels of intellectual self-esteem and confidence to engage in future team-related activities. Ample research evidence has identified similar desirable social, psychological and product outcomes arising from engagement in learning communities (e.g., Johnson et al., 2007; Rovai, 2002; Zhao & Kuh, 2004).

With the view that learning communities hold considerable promise for building capacity and supporting graduate attributes in all HE programmes, the current findings would seem to be especially encouraging and have important practical implications for the way educators consider and attempt to support teaching and learning. Specifically, if HE in the 21<sup>st</sup> century is serious about transforming institution-wide practices into responsive pedagogies, then focus should be strongly directed towards interacting and drawing on external agents. In other words, breaking the isolation of the classroom and extending the notion of ‘community’ holds potential for students to learn in the presence of near peers and apply exemplars of mature practices. It is in this way, also, by linking students to communities whose practices are consistent with that forwarded as curricular goals (e.g., enhanced teamwork skills), they can better develop a sense of ‘self’ in their work in society—not simply in the work of being a student (Lave & Wenger, 1991).

Overall, the findings in Figure 21 (p. 138) are supported in the student development theory literature. For example, the literature argued that the design of the learning environment serves to both challenge and support students to move to higher levels of intellectual and psychological development (Chickering & Reisser, 1993; Evans, Forney, Guido, Patton, & Renn, 2010). Development is conceptualised as a process whereby students grow and adjust in response to dealing with situations that create a mismatch (King & Kitchener, 1994) or induce disequilibrium (Piaget, 1964) into their routine ways of responding. In particular, the literature indicated that purposeful, collaborative activities with peers from different cultural and disciplinary backgrounds introduces disequilibrium, thereby setting the stage for students to develop richer, complex ways of thinking and knowing (Zhao & Kuh, 2004). However, at the same

time, the literature reinforces the notion that if the environment presents too much challenge, students can regress to earlier, less adaptive modes of behaviour; solidify current modes of behaviour; escape the challenge; or ignore the challenge if escape is impossible (Evans et al., 2010). Conversely, if the learning environment is of little challenge, students may feel safe and satisfied, but they do not develop (ibid.).

This is congruent with the findings of the current research study where, despite the structuring of positive interdependence to compel students to share critical information and materials through every stage of the team project rather than employ a divide-and-conquer strategy, a minority of research participants still reported ‘isolation’ as opposed to ‘development’. Partly, this may be due to the reality that how teams function (i.e., core action processes) or how they transfer teamwork skills, behaviours and attitudes from one context to another was not well understood by participants, even though all had considerable experience with teamwork, being in their final year of study and approaching graduation. Therefore, it cannot be assumed that students already know how to work effectively in teams. This conclusion is supported in the literature discussed in Chapters 2 and 3. Knowing this, it is the author’s suggestion that if educators integrate team-based projects into the curriculum to engage students both experientially and cognitively and, ultimately, enhance graduate employability, they should explain the determinants of overall team effectiveness and what can go wrong when teamwork skills are weak. This necessitates that educators themselves have a clear understanding of teamwork as a multidimensional construct; hence, the significance of the current research study and the timely presentation of a holistic, integrated model of team effectiveness.

The overall findings are consistent also with the basic premise of social interdependence theory and motivation literature in that when students recognise the team as an attractive work arrangement, they feel a sense of responsibility to their peers and are motivated to exceptional performance in order to make the successful attainment of shared goals more likely (Lembke & Wilson, 1998; Huntington, 2005). This may explain why ‘appropriate workload’ was a nonissue for participants of the current study; which

contradicts previous research suggesting that ‘heavy workload’ is one of the most common complaints expressed by students working in teams (Payne & Monk-Turner, 2006; Pfaff & Huddleston, 2003).

In fact, in the current research study, analysis of students’ open-ended comments clearly revealed that the vast majority of them generally were happy to extend themselves in terms of completing tasks as agreed and on time, even though supplementary work was required and there were competing agendas both in- and out -side of studies. In such episodes, it can be inferred that participants chose to exhibit both personal motivations (e.g., self-investment) and “intellectual passion” (Polanyi, 1974, p. 142) in their pursuit of clarity, meaning and coherence in the management of their virtual company. Focused-code examples of intellectual passion—*desire for meaning, desire to know and satisfy curiosity, desire to adapt to problems, resolve inconsistencies and/or cognitive conflict, and desire to extend the scope of ideas*—are all directly connected with the team project in which the participants were engaged. So, while all individuals have a unique set of motivational constructs, with some more salient for one person than another, it appears that motivations may also be communal.

This is closely allied to the concept of collectivism, a feature of Eastern and Confucian heritage cultures (Stevenson & Lee, 1996; Wong & Wen, 2001), and is interesting considering that just over one-half (52%) of the research participants were Asian international students. In learning situations within a socially-oriented context, findings from cross-cultural studies and views from achievement theorists provides some evidence that students of a collectivistic orientation highly value others’ expectations and needs, resulting in group goals taking precedence over personal goals (Kumar & Maehr; 2007). This suggests that domination and individualism, characteristics often associated with Western mainstream cultures, are replaced by reciprocity and cooperation, which greatly impact upon team- building and -outcomes.

This appeared to be somewhat the case in the current study; that is, although the qualitative data revealed that many Asian students appreciated the importance of

developing and sustaining harmonious relationships with their Western counterparts and valued the significance of their ‘team learning situation’, there were some who held intense negative views about this teaching approach being ‘imposed’ on them. This latter finding is consistent with previous research (Holmes, 2004; Wong, 2004) and is significant because it highlights that values and practices, like any human characteristic, fall along a continuum—there are elements of both individualism and collectivism in any culture depending on environmental circumstances (LaFromboise, Coleman, & Gerton, 1993; Trumbull, Rothstein-Fisch, Greenfield, & Quiroz, 2001). As Salili and Hoosain (2007, p. 4) observed, “it is quite a common phenomenon for an individual to switch back and forth from one cultural orientation to another”. This variability among people, therefore, highlights that while a framework of cultural dichotomies (individualism/collectivism) can be a useful tool for helping educators’ better understand cross-cultural interactions and tendencies within a group, it should not lead to rigid predictions about specific sets of beliefs, values, attitudes and behaviours of groups or individuals. A final point to be made here is that as organisations, communities, nations and the population of HE become increasingly diverse, educators must be concerned with designing learning environments that are equitable to *all* students, regardless of their cultural, religious, gender or racial background; thereby, assuring that all soon-to-be graduates gain the knowledge and skills necessary for success and empowerment in a culturally diverse world.

With respect to **Figure 22** (p. 138), the empirical findings clearly show that of the learning environment variables under investigation in the current research, only the higher order constructs of IM, CG, and LC were found to have a significant and positive influence on students’ overall satisfaction towards their team experience. When considering the educational validity of the Capstone unit this pattern of findings should not be particularly surprising, as the team project was specifically designed continuously to elevate business students to higher levels of critical thinking, innovative pedagogical practices and broader spontaneous learning experiences analogous to ‘real’ world phenomena.

As anticipated, participants' comments showed that those who felt intellectually challenged were more involved with the work, and that the interaction and intensity of engagement increased positively as they collaboratively worked together in small teams to master concepts, problems and skills beyond what they could understand, develop or accomplish on their own. Also, there was a sense that as teams successfully completed each round of activities, participants gained the confidence to embark on more complex challenges.

These findings support literature that contends that students are also more likely to be satisfied with their learning experience when they are involved in meaningful and diverse tasks or activities where they can deepen their knowledge and expertise. It is worth noting that the immersion of participants in a rich and intellectually challenging context may well and truly have proved beneficial to instructors also; one key aspect to the use of novel or innovative courses, such as Capstone, is that of helping shift students' learning paradigm *from* memorisation of content for performance *to* building understanding for 'real' world application. This inference is supported in the literature discussed in Chapter 2 of the current research study.

With respect to CG (Clear Goals and Standards), it is easy to understand that students would be satisfied with their team experiences when they are clear from the onset on where they are headed and whether or not criteria is going to be flexible. Also, one would expect that when high goals and objectives for the success of all students are clearly communicated, students are more likely to understand that a culture of learning has been set; one related to the purpose of teamworking and expectations for performance. Indeed, in the present study, both the quantitative and qualitative results showed this to be the case. This supports prior research (e.g., Raffini, 1988; Maehr & Braskamp, 1986) where it was found that goals act as a governing mechanism that provide a measure for achievement and feeling of success, as well a guide for avoidance of failure. The current finding is important because it extends goal setting theory developed at the individual level; specifically, previous studies have determined that 'clear goals and standards' will result in higher levels of performance and the present

study has demonstrated a similar relationship with respect to satisfaction as an output of overall team effectiveness.

A sense of community had a statistically significant influence on satisfaction demonstrating that not only is it the ideal forum for allowing students to hone their teamworking ability, but also that it contributes to their ‘feeling good’ in themselves and of being satisfied. In particular, a strong sense of connectedness, meaning and feelings of being valued and validated pervaded the exploratory data.

Time and again participants identified that the LC (Learning Community), characterised by supportive peers and positive interpersonal interactions, directly contributed to the enjoyment of their team experience and to their sense of fulfilment. The LC also appears to have contributed to perceptions of safety; a safe learning environment was one characterised by a sense of security and of trust where participants felt free to ask questions, express opinions, extend ideas and take on challenges without fear of recrimination, judgment and negative criticism. In turn, open communication during task discussion, the resolution of conflict arising naturally from the sharing of differing perspectives and other team action processes were made that much easier. Certainly, this in preference to viewing conflict, for example, as caused by ‘difficult’ members or problems that need to be pushed aside, which can later emerge to undermine the team’s functioning. In essence, it appeared that most participants, bonded by a joint enterprise and shared perceptions of a positive team climate, chose to enact discretionary behaviours and direct their efforts toward achieving collective goals. These findings offer several important contributions and implications for the way faculty and teaching staff think about instituting learning communities for promoting interpersonal cooperation and teamwork within the context of HE.

Firstly, the immediate findings above encapsulate what research has revealed about pedagogical techniques and classroom application that encourages active participation, growth and development—that is, students of varying personal backgrounds (e.g., national, cultural and linguistic) and widely ranging abilities, skills, functional

perspectives and so forth will respond. Further, the findings demonstrate that students, to a large extent, perceive collegial relations and collective practices as pleasing and integral parts of their educational experience. This may pose a challenge to faculty who advocate didactic lectures and other traditional instructional methods to facilitate learning and to those who underestimate both the value of the team experience and students' positive orientation toward them. Though, within any programme of study there needs to be a balance between courses/units involving teamwork versus individual practical work. In other words, teamwork should be part of a repertoire of approaches to teaching to cope with varied styles of learning for as Thorley and Gregory (1994, p. 179) emphasised, "[teamwork] is not appropriate for all learning occasions with all students". Notwithstanding, it is important that teaching staff are fully aware of students' good team experiences so that negatively biased perceptions of the method may be reduced. As discussed earlier in Chapter 2 of this report, extensive research has demonstrated that negative attitudes toward a concept or object has a more powerful influence on thinking and behaviour than do positive attitudes.

Secondly, the underlying perceptions and descriptions of a safe environment provided by participants closely match those within Kahn's (1990) work and strongly reflect his conditions required for engagement. Further, both Edmonson (1999) and May, Gilson, and Harter (2004) found a similar connection between safety, support and trust as was identified in this research. Unfortunately, despite considerable studies on the determinants of trust, for example, and the lack thereof to the development of a collaborative team, little remains known about *how* such affective-cognitive state-like constructs affect both team- action processes and -effectiveness criteria (De Jong & Elfring, 2010). Moreover, the author could not find any team effectiveness models that explicitly acknowledge the presence of these powerful constructs to team performance. In contrast, the qualitative findings of the present study provide some evidence to support the view that affective-cognitive conditions have a *mediating* effect on the transformation of input variables to both team and individual performance outcomes (e.g., member satisfaction) via team action processes. Specifically, the ability of students to make connections with one another that build a sense of trust, empathy, respect and

mutual obligation and create a common language that can be shared by all members will strongly impact on how they can create value to the team experience.

However, caution should be taken not to overstate the mediating role of any single psychological variable when multiple psychological variables relevant to understanding the synergistic interrelationships are also at play. That is, it is the author's point of view that because affective-cognitive constructs are multifaceted and appear to be so inherently intertwined that focus on one to the exclusion of others may extend a fragmented understanding of how said state-like processes are likely to truly affect overall team effectiveness. Thus, future investigation to ascertain the efficacy of such interrelationships is warranted and is of special relevance in relation to student teams in the HE setting.

Finally, since team action processes are implemented through team members' deployment and application of assets, open communication among members is an absolute requirement for achieving success. The whole concept of teamwork is that the outcome will be better because it has been created by the combined contributions of individuals. The value of divergent views, then, can only be realised when there is an open flow of information, as was evident with participants of this research and consistent with findings in the extant literature. Therefore, it is suggested that educators consider conducting in-class team building activities and maintenance techniques *throughout* the semester or the project duration so as to improve students' awareness and understanding of the underlying practices and processes that support a climate that makes collaboration expected, inclusive and genuine. This recommendation is consistent with the findings of Prichard, Bizo, and Stratford (2006) who found that prior team-skills training produced superior collaborative group work in comparison with that of students placed in unfacilitated groups. The benefits of using team building strategies, such as self-disclosure and conflict management to strengthen relationships are also known in organisational or industry contexts (Wageman & Gordon, 2005). Interestingly, many experts have indicated that effective team building can take up to five years (French & Bell, 1994). With this in mind, to offer the greatest chance for competent

practice it is strongly recommended that students receive directed team training each consecutive year of their programme of study.

Concerning findings that neither the construct of AA (Appropriate Assessment) or GT (Good Teaching) are a significant predictor to students' teamworking ability development or to their overall satisfaction with the team experience in comparison with previous literature is noteworthy.

Initially, the finding in relation to AA was unexpected when considering its use in HE, namely, to contribute to feedback to students on their learning (formative and developmental assessment) and the certification of their achievement at the point of completion of a course or programme of study (summative assessment). At both an intuitive and statistical level it makes sense that students should be concerned with the criteria by which they will be evaluated as it is in their own self-interest to maximise their academic performance. Indeed, research has long suggested that students approach their studies and engage with subject matter based, in part, on the actual assessment demands or even their particular perception thereof (Entwistle & Entwistle, 1991; Struyven, Dochy, & Janssens, 2002). This is not surprising when considering students' patterns of participation at university—many have other equally important family, social, and work commitments and so, assessment like all activities must be relevant and manageable to support their needs. The argument made by Boud (1998) was that students can escape (with difficulty) the effects of poor teaching, but they cannot (by definition if they want to graduate) escape the effects of poor assessment.

Notably, although the higher-order construct of assessment was found to be statistically unrelated to students' ability and satisfaction, the exploratory research clearly indicated that some participants were concerned with the assessment practices they were part of. Specifically, some participants reported issues associated with 'assessment structure', 'distribution of marks' and 'consistency of marking'. As highlighted in Part One of the current chapter, a minority of participants would have preferred a final exam, while some felt that there were too many 'small' assessments or too much emphasis on the

group component. Also, there was a real demand for the inclusion of marking keys or rubrics to serve as a moderating tool for teaching staff and so that participants could better respond to expectations. These findings are consistent with Feichtner and Davis (1984) who found that students were much more likely to report a best team experience in classes in which either one or no class presentations were required and when five or more group exams were given. Also, written reports had a similar but even more pronounced effect insofar as when three written reports were required there was almost no difference in the proportion of students reporting best and worst experiences, but when four or more were required they were much more likely to report a worst experience (ibid.). Taken together, the findings reported by Feichtner and Davis highlight the quandary of how many and what kind of graded group activities instructors should assign so as to provide sufficient opportunity for student teams to become cohesive without having a negative effect.

With respect to the distribution of marks it is worth noting that, in the present study, the group performance dimension constituted 45% of the unit assessment whereas the individual component totalled 55%; thus, providing opportunity for students who have the individual ability to succeed to do so without being pinned down by ‘slackers’ or problematic team members (Johnson et al., 2007). Also, the grade percentage is consistent with Feichtner and Davis’ (1984, p. 65) results where it was found that the *majority* of students reported a best team experience when “group work accounted for between 41 percent and 80 percent of the grade”.

The second higher-order construct of GT (Good Teaching) was found to be not significant to students’ teamworking ability development and their overall satisfaction with the team experience. This result was surprising for its inconsistency with the qualitative findings in this research and previous studies. For instance, although there is a wealth of literature that supports the efficacy of university students working collaboratively in small teams, teamwork can provide resistance due, in part, to well-intentioned faculty assigning team projects without providing students the concrete information and systematic guidance deemed necessary for ideal team performance.

Survey results from Feichtner and Davis (1984) found that students were particularly frustrated when they believed the instructor lacked skills to maximise team-based learning or shirked responsibility for helping the teams. Similarly, Bolton (1999, p. 234) noted several deleterious effects on student teams because of instructors who use the “sink or swim” learning model, and reported that students had “a much greater satisfaction rate when provided with additional in-class teambuilding training and an instructor who plays the role of team coach in the classroom”. Notably, similar sentiments emerged from the open-ended comments provided by participants in this research, so it was somewhat unexpected that GT was found to be a nonsignificant predictor of student ability or satisfaction.

Having said that, in contexts where teaching staff carefully have structured team assignments to meet the standards advocated by collaborative learning scholars, the role of the instructor becomes altered to become more akin to a facilitator rather than a lecturer, while students adopt the role of active learners. In this respect, the elements critics refer to as lacking are compensated for, or even paralleled by, students themselves as they take greater ownership of team relations in order to achieve shared goals. This is consistent with motivational theory or, as Chapman, Meuter, Toy, and Wright (2010, p. 44) contended “smoothly functioning groups do not require the intervention of faculty”. This may help explain then, why GT was found to be a non-significant predictor of student ability and satisfaction in the present study.

### **5.3.3 Comparative Analysis with the Research Questions**

The overarching question in the current study was: What requisite mix of teamwork skills are expected of a business graduate entering career-ladder employment? Also, the minor or secondary questions guiding the main one from Strand One of the research are:

1. what teacher-controlled variables of the learning environment significantly influence students’ teamworking ability development?;
2. what teacher-controlled variables of the learning environment significantly influence students’ overall satisfaction with the team experience?; and

3. what 'best practice' model of team effectiveness can be recommended to academics to better facilitate and support their students' teamworking efforts and enhance the successful development of individual performance outcomes?

Statistically speaking, the results of the regression analyses (Table 16, p. 131) revealed that the variables of the learning environment significantly influencing the development of a student's teamworking ability are: (i) intellectual motivation, (ii) learning community and (iii) appropriate workload, independently of other variables.

Specifically, evaluation of the beta weights show that 'Intellectual Motivation' and the perceived existence of a 'Learning Community' had a significant, positive and substantial influence on students' teamworking ability development, whereas the 'Appropriate Workload' variable had a significant, inverse and relatively small influence on the criterion variable ( $\beta_1$  respectively .38, .21, and -.12).

However, it must be noted that although the F-value of the regression model (Table 16) shows it to be statistically significant for predicting the strongest determinants of students' teamworking ability development, the model itself accounts for approximately 30% of the variance only. Therefore, there are other contributing variables or factors influencing the development of a student's teamworking ability that were not identified in the present study. This underscores the need for further research.

The qualitative data substantiated the aforementioned findings and proved most useful in helping to expand particular aspects of the learning environment that students' perceived as either enhancing or stymying the development of their teamworking ability.

Concerning the variables of the learning environment significantly influencing students' overall satisfaction with their experience, the results of the multiple regression analyses (Table 17, p. 133) showed these to be: (i) intellectual motivation, (ii) clear goals and standards and (iii) learning community, independently of other variables.

Specifically, ‘Intellectual Motivation’ had a significant, positive and greater influence on student satisfaction relative to ‘Clear Goals and Standards’ and the perceived presence of a ‘Learning Community’, as evidenced by the evaluation of the beta weights ( $\beta_1$  respectively .44, .28, and .12).

Notably, although the F-Value of the regression model (Table 17) shows it to be statistically significant for predicting the strongest determinants of students’ overall satisfaction with their team experience, the model itself accounts for approximately 50% of the variance only. Hence, future research is warranted to examine other variables of the learning environment influencing students’ satisfaction of their team experience.

The qualitative data complemented the aforementioned findings and again provided more understanding of particular aspects of the learning environment that students’ perceived as either enhanced or impeded their satisfaction of their team experience.

Concerning the recommendation of a ‘best practice’ model to educators to facilitate and support their students’ teamworking efforts, it is first necessary to compare the results in this chapter with the hypothetical model (Figure 13, p. 77) developed in Chapter 3 from the previous literature and research contexts presented in Chapter 2. Thus, in the following section attention is given to the findings of Strand One of the study in relation to the hypothetical model.

#### **5.3.4 Comparative Analysis with the Hypothetical Model**

When comparing the results in this chapter with the hypothetical model (Figure 13) established in Chapter 3, some findings were consistent with the major part of the hypothetical model. However, other findings suggest a possible number of useful changes. The revised model resembles the hypothetical model in the relationships between ‘Clear Goals and Standards’, ‘Intellectual Motivation’ and ‘Learning Community’ (conditions within the overarching categories of Task Characteristics and Situational and Organisational Characteristics) with ‘Skills Development’ and ‘Satisfaction’ (conditions within the overarching category of Individual Performance

Outcomes). It deviates from the hypothetical model (Figure 13) in that the relationship between ‘Appropriate Workload’ and ‘Skills Development’ was weak. Furthermore, the hypothetical model proposed that ‘Good Teaching’ and ‘Appropriate Assessment’ were related to ‘Skills Development’ and ‘Satisfaction’, however, results showed that there were no associations.

The qualitative findings resulting from analyses of participants’ open ended comments showed that conative processes could be included with affective-cognitive processes and open communication as affecting the ‘skilful practice’ of teamwork, leading to overall team effectiveness. The mental domain of conation is referred to as the connection of knowledge (cognition) and feelings (affect) to the intentional or conscious (as opposed to reactive or habitual) aspects of behaviour (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Kane, 1985). In addition, relationships were suggested between reflective practices and improved future team experiences.

### **5.3.5 Interim Research Outcomes Model**

Consequently, drawing upon the results and analyses found in this chapter, a new model is proposed for use in designing learning environments that better promote students’ teamwork practice and overall team effectiveness in the context of HE. The ‘interim research outcome model’ (I. R.O.M.), as shown in Figure 23 (p. 157), has three major advantages over the hypothetical model proposed in Chapter 3.

Firstly, a learning environment for fostering the ‘skilful practice’ of teamwork and improving individual performance outcomes needs to be intentionally designed to reinforce the positives and minimise the negatives. Specifically, the conditions of the learning environment identified as critical to influencing the development of students’ teamworking ability and their satisfaction with the team experience include intellectual motivation (or challenge of the team task), clear goals and standards, and the presence of a learning community. Therefore, these conditions are represented in bolded lettering in the I.R.O.M.

Secondly, the I.R.O.M. addresses the importance of open communication and the **three** processes of mind: cognitive, affective and conative. Broadly speaking, a core element of a good team is its ability to successfully generate competence from its individual members and consolidate it into a team effort. This of course gives emphasis to the underlying concept of personal agency; that is, a student may have well-developed communication skills and a strong desire to communicate effectively, but if he or she chooses not to act on it, the desire itself will not initiate action. Therefore, the tripartite faculties of the mind are included as key elements in the I.R.O.M. Notably, many researchers within psychology (e.g., Bandura, 1997; Baumeister, 2002; Huitt, 1999) believe that volition is absolutely critical if an individual is to engage successfully in self-regulation and self-control, and that helping develop students' conative capacity is one of the most important tasks facing educators in an increasingly chaotic social and cultural milieu. According to Baumeister (2002, p. 130), "the benefits of self-control [for example] can scarcely be overstated ... in fact, one person's good self-control seems to benefit not only that person but other people around that person and even society at large".

Lastly, having emphasised that intelligent behaviour for the 'skilful practice' of teamwork requires a synthesis of cognition, affect and conation along with open communication, the third advantage of the I.R.O.M. in comparison to the hypothetical model is the inclusion of reflective practices. It is often said that 'those who are unaware of history are destined to repeat it'—that the past can serve to remind oneself of lessons learned so that ineffective behaviours can be remedied for future situations. It is widely accepted that the end point of reflection is often an expansion of understanding and an increased awareness of aspects of one's performance (Gergen & Gergen, 1991). In becoming aware, one brings their actions and behaviours to a more conscious level where one can question, challenge, compare and articulate them or consciously modify or replace them. Based on the present findings, the insights gained from critical reflection has the potential to provide a more solid base for optimising the functioning and productivity of subsequent team experiences. Therefore, reflective practices are included as an integral component of the I.R.O.M. However, students must see

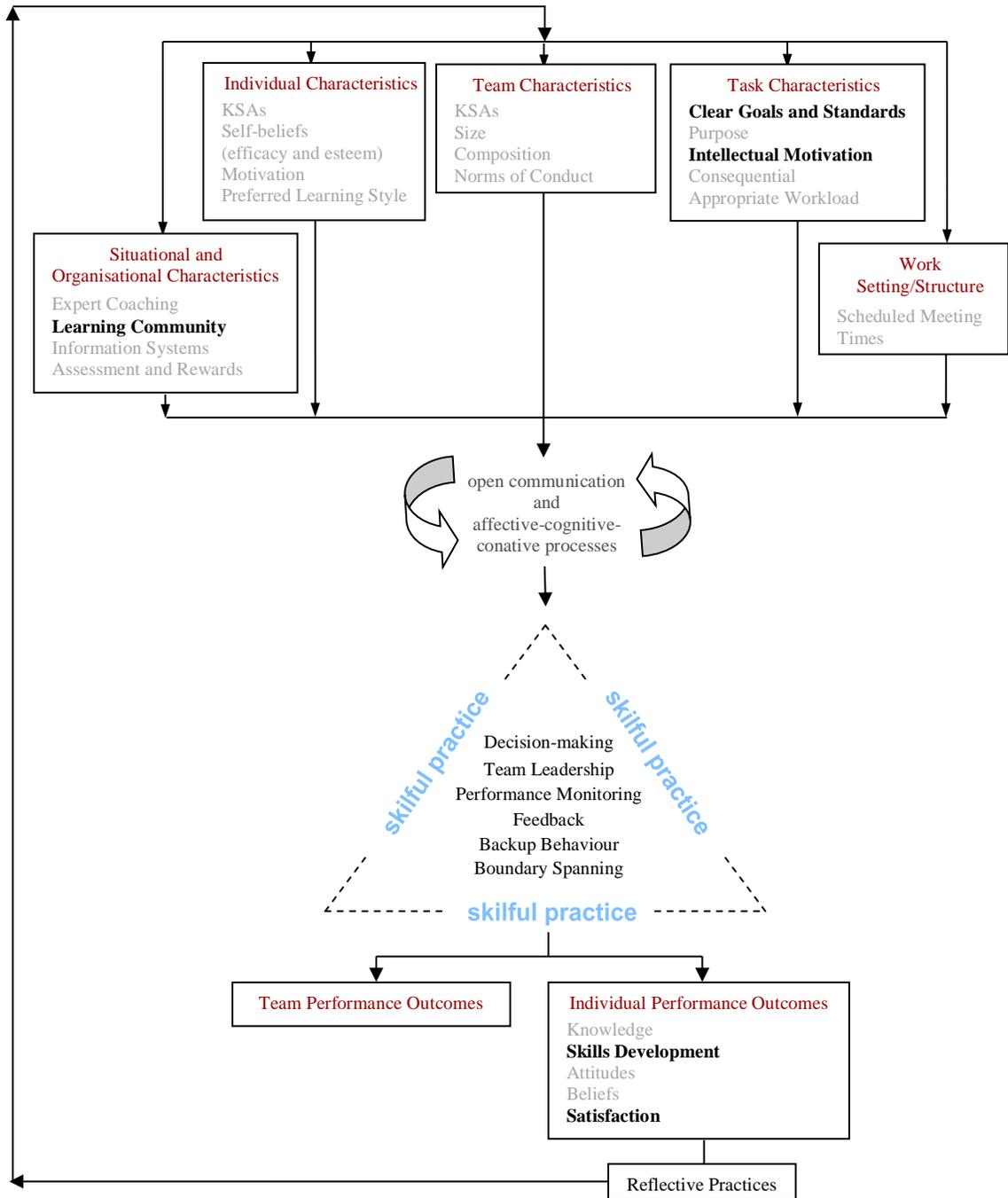
themselves as the active agent in this process. Notably, research suggests that to reflect deeply and critically is a difficult skill that few students (and instructors) intuitively know how to do (Spalding & Wilson, 2002). That is, it is easier to communicate descriptively about one's team experience than to offer applications or connections (Dyment & O'Connell, 2010). It is therefore recommended that academics deepen their understanding of reflective strategies in order to facilitate students' engagement in said.

In the light of the above and, concerning research question 3, the I.R.O.M. may possibly be considered as a 'best practice' model that educators could easily adopt as part of the curriculum design process to better facilitate and support their students' teamworking efforts and enhance the successful development of individual performance outcomes. It is important to note here that the recommendation of the I.R.O.M. as a 'best practice' model is limited in that the current research study was constrained to investigating the relationships between a set number of variables within the model.

#### *5.3.5.1 Graphic model*

The graphic model Figure 23 (as shown on the following page) illustrates the I.R.O.M. from Strand One of the current study for use in better facilitating and supporting students' teamwork practice and enhancing overall team effectiveness in the context of HE. As shown in the Figure 23, a number of significant relationships existed between conditions within the overarching categories of Task and Situational and Organisational Characteristics with conditions within the overarching category of Individual Performance Outcomes. As previously mentioned, the conditions of the learning environment identified as critical to influencing Individual Performance Outcomes are represented in bolded lettering. Also, as can be seen in the Figure 23 is the inclusion of open communication along with the synthesis of cognitive-affective-conative processes (such as building a sense of trust, empathy, respect, mutual obligation and shared cognition) as having a mediating role in the transformation of input variables to performance outcomes via team action processes. Further, the Figure 23 illustrates the presence of reflective practices as an important feedback loop in guiding the functioning and productivity of subsequent team experiences.

**Figure 23: Interim Research Outcomes Model**



## **5.4 Chapter Summary**

In this chapter, the findings of the survey were presented and discussed in relation to the literature review (Chapter 2), the research questions developed for Strand One of the study and the hypothetical model (Chapter 3), as derived from literature. This resulted in an interim research outcomes model (I. R.O.M.). Also, recommendations for improving educational practice were made throughout the discussion. In the next chapter, Chapter 6, the qualitative findings with respect to the objectives of Strand Two of the research study are reported and discussed.

## **CHAPTER 6**

### **QUALITATIVE RESULTS AND DISCUSSION**

#### **6.0 Introduction**

In this chapter the qualitative findings for Strand Two of the investigation are presented and discussed. In accordance with the explorative approach utilised by the author, as detailed in Chapter 4 (pp. 95-98), data gathered through the interview process has been structured according to each cohort of participants and under general headings in line with the interview schedule and themes that emerged. This structure was chosen to enable the findings to be interpreted in a meaningful manner and as a means of discussing the material in relation to the objectives of Strand Two of the study and the literature reviewed in Chapter 2. In addition, the secondary research questions developed for the second strand of the investigation are addressed. Next, a final synthesis of the research findings from Strands One and Two of the study is made and a new research outcome model (R.O.M.) is presented and discussed. Also, key points of difference between the R.O.M. and previous ones in available literature is defined. Following that, a final summary is made of the chapter.

#### **6.1 Organisation of Results and Discussion**

In the literature, teamwork is widely recognised as an essential skill of new business graduates entering the labour market. Also, the value of teamwork skills is strongly reflected in the graduate attribute statements of most Australian universities, as they are invariably charged with transforming academic coursework and programmes to serve the changing needs of a knowledge economy; in the commonly accepted achievement of HE, teamwork is promoted as part of a flexible and transferable skill set suitable for use in varied types of employment. Accordingly, team-based projects have long been integrated into business course curricula throughout universities worldwide as a means

by which students can learn how to work effectively as part of a team and, thereby, be prepared for professional employment upon graduation.

However, investigation of the relationship between HE and the labour market has indicated an apparent disparity between what incoming business graduates are prepared to contribute to their new workplaces as compared to what employers want. The evidence for this critical statement is extensive (Caspersz et al., 2005; Ford, 2007; Leggett et al., 2004; Star & Hammer, 2008). For example, as recently as 2009, research conducted by the National Association of College and Employers (NACE) consistently indicated that the skills employers most want in their new hires are lacking in many new graduates (Kemp, 2009). Also, the chief executive of the Association of Graduate Recruiters is reported as saying it seems like the “penny hadn’t dropped”, that students need to acquire the skills demanded and become better able to demonstrate the ones they already have (Ford, 2007, n. p.). This schism between perceptions and expectations is a significant problem, with the question remaining as to whether teamwork as experienced in the classroom can be claimed to fulfil the role of developing the skills needed for successful teamworking in ‘real’ work settings?

Notably, analysis of the literature has indicated that while teamwork skills are expected of graduates upon graduation, employers have provided little explanation as to what these teamwork skills are and what level of competency graduates are expected to bring to the workplace (Hodges & Burchell, 2003; Sin & Reid, 2006). It is clear therefore, that in order to help business students acquire the ‘requisite mix’ of teamwork skills needed to meet the demands of ‘real’ workplace environments, a common understanding is needed of what these skills are and the importance attributed to the facets thereof. Further, there must be a continuous flow of communication between academia and business communities to students in order to remove any misconceptions they may have about what employers are seeking.

Strand Two of the research study was focused on investigating what skill requirements held at the individual level make a team successful from the perspectives of employers

and students so as to help close the existing gap between perceptions and expectations as it relates to employers' demand for business graduates equipped with the 'requisite mix' of teamwork skills and educational response. This objective was used to construct the interview schedules for both students and employers, with a set of common questions to enable comparisons and identify any significant differences. The following presentation and discussion of the findings from the interviews are grouped under general headings to enable more directed analysis and discussion, and also on the understanding that a new conceptual model of team effectiveness will be synthesised after consideration of these findings.

In support of the discussion, and to facilitate visual identification of interviewees' responses, italics have been used and 'voices' separated by the use of quotation marks. Also, because of privacy requirements each participant has been assigned a code; S1-S14 and E1-E16 for students and employers, respectively. The chapter begins by providing the demographic details of participants from each sample interviewed.

## **6.2 Characteristics of the Research Participants**

### **6.2.1 Student Participants**

As reported in Chapter 4 (p. 95), the same cohort of students who completed the survey questionnaire in Strand One of the research was invited to participate in the interview process for Strand Two. As students were in their final semester of a undergraduate degree programme and nearing completion of the Capstone project, it was felt that they were better positioned to reflect more fully and critically on their team experiences. Fourteen students were interviewed in conjunction with Strand Two of the research.

Several demographic variables were collected which included gender, age, language background, country of origin, enrolment status, employment status and participation in a team-oriented sport. A summary of the sample population is represented in Table 18.

For gender comparison, there was an equal representation of male and female respondents. When comparing the age of respondents, the ages ranged from 20 to 29 years of age. The majority were those in the age group of 20-24, with two participants between 25-29 years of age. In terms of language, English was the dominant language spoken for 11 of the respondents while three respondents said that English was a second language for them. For the country of origin, four participants were from Malaysia, four from Australia, one from Malawi, two from China, one from Hong Kong and two from South Africa. Clearly, responses were obtained from a multicultural sample. With respect to enrolment status, eight respondents reported having international student status while six respondents were enrolled as domestic students.

**Table 18: Demographics of Student Participants**

Variable	Total Participant Numbers	Percentage of Participants (%)
<i>Gender</i>	Male x 7	50%
	Female x 7	50%
<i>Age Group</i>	20-24 x 12	86%
	25-29 x 2	14%
<i>English as Dominant Language</i>	Yes x 11	79%
	No x 3	21%
<i>Country of Origin</i>	Malawi x 1	7%
	Malaysia x 4	29%
	China x 2	14%
	Australia x 4	29%
	Hong Kong x 1	7%
	South Africa x 2	14%
<i>Enrolment Status</i>	International x 8	57%
	Domestic x 6	43%
<i>Employment Status</i>	Current, Part-time x 6	43%
	Current, Full-time x 2	14%
	Past Employment x 4	29%
	Never Employed x 2	14%
<i>Team Sport Participation</i>	Never x 8	57%
	Current x 4	29%
	Past x 2	14%

When asked for information about employment status, six respondents reported being employed on a part-time basis, two were employed full-time, four had been previously employed but were not currently working and two respondents had never been employed. In terms of involvement in a team sport, slightly more participants had never been involved in a team-oriented sport (57%) than those who were either currently on teams or had been in the recent past (43%); an indication of non-academic and non-work team experiences.

### **6.2.2 Employer Participants**

Eleven employers were interviewed (five males and six females, respectively), as shown in Table 19. The major sectors of business and industry in the sample included but were not limited to recruitment, accounting, business administration, human resources, public relations, service management and operations, marketing/sales and information systems. All respondents occupied management positions: three were top-level managers (two owner/managing directors and one managing partner), three were middle-level managers (one divisional manager and two general managers) and five were first-level managers (three office managers and two department managers). The number of years within the positions ranged from less than 10 years to over 20 years. Predominantly, more participants were employed in private sector organisations than in the public sector.

With respect to the organisations themselves, of the nine private organisations, seven have over 100 employees, one has between 20-99 employees and one organisation has 19 or less employees. Both public sector organisations employ more than 100 persons. All organisations within the private and public sector hire a number of business graduates each year; typically, both public and private organisations hire 10 or fewer graduates per year. One organisation (private) hires 16-20 graduates annually. Neither of the organisations within the public sector has a graduate training programme, whereas private organisations generally do, with training lasting for two years, in general.

**Table 19: Demographics of Employer Participants**

	Variable								
	<i>Gender</i>	<i>Profession</i>	<i>Position</i>	<i>Years in Position</i>	<i>Business Sector</i>	<i>No. of Employees</i>	<i>Graduate Training Programme</i>	<i>Duration of Graduate Training Programme</i>	<i>No. of Business Graduates Hired/Year</i>
Participant									
E1	Female	Recruitment	Divisional Manager	10+	Private	100+	Yes	2 Years	11-15
E2	Female	Accounting	Managing Partner	10+	Private	100+	Yes	<3 Months	6-10
E3	Female	Management	Office Manager	7-9	Public	100+	No	-	1-5
E4	Male	Public Relations	General Manager	10+	Private	100+	Yes	2 Years	21-25
E5	Male	Service Management & Operations	Owner/Managing Director	10+	Private	1-19	Yes	2 Years	1-5
E6	Female	Business Development	Office Manager	1-3	Private	100+	No	-	1-5
E7	Female	Human Resources	Department Manager	1-3	Public	100+	No	-	6-10
E8	Female	Finance & Commercial Property Development	Owner/Managing Director	10+	Private	20-99	No	-	1-5
E9	Male	Information Systems	Office Manager	1-3	Private	20-99	No	-	1-5
E10	Male	Management	General Manager	4-6	Private	100+	Yes	2 Years	6-10
E11	Male	Sales & Marketing	Department Manager	4-6	Private	100+	Yes	2 years	16-20

Note: Top-level management = E2, E5, E8. Middle-level management = E1, E4, E10. First-level management = E3, E6, E7, E9, E11.

## **6.3 Findings and Discussion: Student Interviews**

### **6.3.1 Introduction**

The protocol for the interviews is fully outlined in Chapter 4 of the current research report. Typically, student respondents did not require any further clarification of the questions asked and warmed well to the interview process as it proceeded; in fact, many commented afterward that the interview was like a ‘debriefing’ that helped reinforce the effective behaviours and skills developed for successful teamwork. Notably, the author was impressed with the thought given by the students to their responses. The findings are grouped under two general headings in line with the interview schedule and themes that emerged to enable more directed analysis and discussion.

### **6.3.2 Perceived Skills Expected in New Business Graduates**

The objective of the first question was to establish a profile of skills that business students consider necessary upon graduation to be competitive in the workforce immediately upon hire, particularly the importance attributed to teamwork skills within this skill set. This profile, then, is to be compared with employers’ ranking of the skills deemed to be most important to identify differences, if any, between students’ perceptions and employers’ expectations. The results can be used when designing learning environments to foster the development of these essential skills, thereby reducing potential gaps between new employee’s abilities and employer’s expectations.

It is worth noting that most investigations into student perceptions of skills has been of a quantitative nature, based on prescribed lists or labels generated by academics or employers (BHERT, 2003). In contrast, the author required students to reflect on their experiences and identify a relevant set of generic skills using their own language and vocabulary.

The responses from the question asking students to nominate the five most important generic or universal skills that they consider necessary at entry into professional

employment evidenced a mix of both skills and personal qualities. The following are responses from three interviewees:

*“Primarily it would be leadership tendencies, teamwork skills and problem-solving skills. Also, that you have good communication skills and you’re involved in your community”* (S2).

*“Critical thinking skills, knowing how to work well in teams, communication skills, that you’re personable ... approachable, and know how to relate to others, especially people from different cultural backgrounds”* (S5).

*“A strong work ethic and that you’re willing to learn ... self-improve. Communication skills, especially across cultures, teamwork skills, thinking outside the box, and time management skills”* (S6).

These were typical responses from all the participants. Given that the question specifically asked students to provide a range of general (generic) skills that they considered essential at entry into their chosen careers, one could assume that there was some confusion or lack of conceptual understanding around what constitutes a skill as they clearly listed a combination of personal attributes and values alongside generic skills. However, Hager et al. (2002) pointed out that most lists of generic skills also include attitudes, values and even dispositions. With respect to the current findings then, the inclusion of personal qualities/attributes should not be regarded as correct or incorrect but rather the opportunity to consider the values that students have as they look toward their futures outside the classroom. However, these skills and personal qualities do not have much relevance per se until compared to the needs of prospective employers.

The two most frequently cited skills were teamwork and communication; therefore, it would appear that students perceive *“knowing how to work well in teams”* (S5) and communication as being the most important qualities expected in new business entrants. This finding is consistent to the views shared by a broad range of constituents, including practitioners, professional associations, students and graduates alike (Baker &

MacGregor, 2000; Yazici, 2004). Also, participants expressed the importance of several other generic skills needed at time of entry including time management, leadership and critical/innovation skills as well as working with diversity in terms of being able to ‘communicate across cultures’ and deal constructively with people who differ from oneself. With respect to personal attributes and values, respondents distinguished qualities such as motivation/initiative, flexibility/adaptability, a strong work ethic and honesty/integrity. Table 20 lists the five most highly distinguished skills and personal attributes that students perceived to be most important for successful entry into professional employment.

**Table 20: Top Five Skills and Attributes Required of Business Entrants: Students’ Perspective**

Order of Importance	<i>Generic Skills</i>	<i>Personal Attributes</i>
1	<ul style="list-style-type: none"> <li>• Teamwork</li> <li>• Communication</li> </ul>	<ul style="list-style-type: none"> <li>• Motivation/Initiative</li> </ul>
2	<ul style="list-style-type: none"> <li>• Interpersonal</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible/Adaptable</li> </ul>
3	<ul style="list-style-type: none"> <li>• Leadership</li> <li>• Time-management</li> <li>• Creative/Innovative</li> <li>• Cultural Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Strong Work Ethic</li> <li>• Honesty/Integrity</li> <li>• Friendly/Open-minded</li> </ul>
4	<ul style="list-style-type: none"> <li>• Organising</li> <li>• Problem-solving</li> <li>• Computer Literacy</li> <li>• Decision-making</li> </ul>	<ul style="list-style-type: none"> <li>• Reliable/Dependable</li> <li>• Well-mannered/Polite/Respects Others</li> <li>• Detail-oriented</li> </ul>
5	<ul style="list-style-type: none"> <li>• Analytical</li> </ul>	<ul style="list-style-type: none"> <li>• Civic Involvement</li> </ul>

Note: Rating, 1 = Most Important

Overall, the findings as displayed in Table 20 indicate that students have a high level of awareness of their professional needs and that they require a suite of skills and personal attributes for a successful pathway to their chosen career. Of course, these characteristics can be developed only partially within the context of HE as cocurricular and wider life experiences also afford students with a range of opportunities for growth and

development for career success. This is consistent with the views of Harvey et al. (2002), but unfortunately, many candidates sell themselves short by failing to discuss these types of experiences when applying for jobs or responding to interview questions, as highlighted in Part One of the review of literature (Chapter 2). The author considers this to be most unfortunate as involvement in community activities, for example, embodies active citizenry and highlights the well roundedness of a potential new hire. Of particular note, in a recent survey it was identified that employers rate volunteer work and participation in activities such as clubs, sports, student associations and so forth within the top distinguishing attributes among candidates (Streufert, 2007). Interestingly, there was one respondent (S2) in the present study who drew attention to civic responsibilities in relation to the perceived requisite skills and attributes for securing meaningful employment.

The perceived importance of personal attributes to future employment is consistent with other studies (e.g., Brennan et al., 2001; McPhail 2001) and is closely aligned with Tomlinson (2007) who suggested that some graduates may perceive employability to be more value- and -identity driven than traditional indicators, as discussed in Chapter 2 of this report. Indeed, De Lange, Jackling, and Gut (2006) indicated that in the accounting profession, professional conduct, reliability and ethical standards rank more highly as sought-after attributes of graduates as employers attempt to minimise the risks of hiring graduates with questionable values and amoral behaviour.

### **6.3.2.1 Summary**

Business students nearing graduation prioritised teamwork and communication as the two most important skills for successful entry into their industry. These skills were considered to be equally significant. In addition, participants articulated the need for several personal-related criteria, with motivation/initiative and flexibility/adaptability rated as most important.

### 6.3.3 Elements of an Effective Team and its Members

In order to help business students acquire the ‘requisite mix’ of teamwork skills needed to meet the demands of ‘real’ workplace environments, a common understanding of what these skills are and the importance attributed to the facets thereof is needed from both parties. Accordingly, the series of questions in the second part of the interview were asked to gain an understanding of the elements of an effective team, particularly the individually-held set of skills needed for successful teamwork from the student perspective.

As a starting point, participants were first asked: ‘What is your definition of a team’? The responses from three interviewees are as follows:

*“A team is a group of people who you may not know but have been put together to undertake and ultimately complete specific tasks for a final report. The final report is the result of each member’s contributions, suggestions or ideas” (S3).*

*“It’s a cohesive group of people with different personalities, cultures, opinions and skills committed to working together towards achieving a shared goal” (S6)*

*“A small group of people, male and female, from different cultures who share responsibility and work together in an organised way to complete a project” (S8).*

These were typical responses from among the participants. A common thread running throughout is that team members must cooperatively interact with one another to perform successfully the team task. Therefore, teamwork may simply be defined as a set of behaviours that support the team’s overall functioning, leading to team effectiveness and goal achievement. But, the question remains as to what behaviours individuals need to bring to each team task in which they engage? Hence, the second question asked at this stage of the interview process: ‘Visualising a team project that you were last engaged in, what did you do to help make the team successful’? To identify the

teamwork related behaviours that emerged from the data, the author referred to the behaviours advanced in the hypothetical model (Figure 13) and the NOTECHS behavioural marker system (Klampfer & Jochum, 2001).

Analysis of the data revealed that the predominant and consistent behaviours that help make a team successful are ‘communication’ and ‘information sharing’. This finding is not surprising since team processes inherently involve verbalisation of information as the underlying means of interaction and clarifies the likelihood of achieving agreement between members for goal attainment. These behaviours are evidenced in the following comments:

*“There was no formal team leader appointed so I assumed the role of leader several times to ensure the completion of tasks within the timeframe. No one was really listening to each other ... there were ideas everywhere so, I made some alternative suggestions that helped us reach a decision. We did very well but I do believe that if I left the team running the way it was then we would not have done half as well” (S1).*

*“I treated my teammates with respect and listened carefully to what was being said. I think this helped establish trust. I also helped others by contributing specialised knowledge and linked the information together so we could make decisions” (S11).*

*“I helped clarify the tasks ahead of us and had no problem exchanging information or generating ideas. I was assertive or firm when I talked with my teammates to ensure that everyone contributed equally, that we were all responsible, and stayed on track” (S14).*

As can be seen in the comments cited above, there is an overlap with other behaviours. For example, the quotes from S1 and S14 are also examples of ‘assertion’ where an individual asserts their opinion (through questions or statements of opinion) during critical times; in this case, the need was to make a decision so as to move the team forward. Closer analysis of the quotes shows that S1 and S11 are also an example of behaviour that ‘recognises the need for decisions’. Still further, S1, S14 (above) and S6 (immediately below) demonstrate leadership behaviours:

*“I helped create a shared vision of what the team could accomplish from everyone’s contribution and abilities. I liaised with others and shared information so we had clarity of the tasks and what strategies to apply so we could achieve our goals. I also lent support by providing feedback to some of my team members” (S6).*

Overall, the findings show that students saw the value of teamwork and exercised positive behaviours to build and maintain successful relations in their teams. Implicit in this statement is that students monitored their collaborative processes. This finding is not consistent with that of Dewiyanti, Brand-Gruwel, Jochems, and Broers (2007) who found that students paid more attention to the procedures they had to follow for task completion rather than in regulating/monitoring group processes.

Also, the overall findings suggest that students, in fact, do have a reasonable understanding of the critical enablers of team effectiveness. The reflective review process of the interview question encouraged participants to think about the characteristics of a functional team and identify their own individual strengths/behaviours that helped make the team effective. The behaviours identified are largely consistent with the proposed interim research outcomes model (Figure 23, p. 157), with the addition of three new behaviours relevant to student teams, namely ‘assertion’, ‘information sharing’ and ‘negotiation’. However, as per the NOTECHS behavioural marker system, ‘assertion’ is subsumed in the broader category referred to as ‘review/modify’, whereas ‘information sharing’ is not a NOTECHS marker, but may be considered to be a more general concept that includes NOTECHS behaviours such as cooperation, situation awareness and leadership. To remain consistent with the experiences of participants and the language used, ‘information sharing’ has retained its own category of teamwork behaviour. Notably, ‘negotiation’ is not an existing NOTECHS behavioural marker and does not appear to feature in any teamwork models or frameworks in the review of literature for this report. An important contribution of this study, then, is the articulation of ‘negotiation’ into a conceptualisation of team effectiveness with value from both a teacher and student perspective. The identified behaviours essential for teamwork from the student perspective are shown in Table 21.

**Table 21: Behaviours Essential for Teamwork: Students' Perspective**

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*Behavioural Markers*

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Hypothetical model	Newly identified
<ul style="list-style-type: none"><li>• Decision-making</li><li>• Leadership</li><li>• Cooperation</li><li>• Backup behaviour</li><li>• Boundary spanning</li></ul>	<ul style="list-style-type: none"><li>• Information sharing</li><li>• Review/modify</li><li>• Negotiation</li></ul>

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Note: Behavioural markers are not displayed in any order of importance.

As shown in Table 21, students identified eight teamwork behaviours needed to facilitate the team processes: decision-making; leadership; cooperation; backup behaviour; boundary spanning; information sharing; review/modify; and negotiation.

Having sought to establish the necessary behaviours that facilitate and support teamwork (Table 21), the final question in this part of the interview process focused on identifying the teamwork skills that individual team members must possess in order to perform teamwork behaviours. When asked ‘What specific skills and/or characteristics does an individual need to have to successfully perform in a team?’ participants identified a range of skills *and* personal qualities:

*“I think obviously communication skills. A willingness to come up with different options or directions in order to achieve our goals, so I guess that would be leadership skills. A sense of humour. Good interpersonal skills and cultural understanding” (S2).*

*“Communication skills ... being able to listen without interrupting. Having the kind of personality where you actually like working in a team and just being honest” (S4).*

*“Communication skills, especially speaking clearly and directly so teammates can understand what’s being said. Empathy. Interpersonal skills in terms of being able to build rapport and relate to different people in the team” (S7).*

*“Communication skills and being really organised in order to keep team members informed. Enthusiasm toward the actual project really helps” (S8).*

These were typical of responses from the participants. Analysis of the data showed that communication skills was cited most commonly, which is not surprising as these skills build upon one another—successful teamwork depends a great deal on successful forms of communication. This finding is consistent with relevant team literature. Leadership, decision-making, organisational, problem-solving and project management skills were also frequently cited. The identification of these skills was not surprising as their significance to the effective functioning of a team is well established in the literature. The findings also showed that a small number of participants identified negotiation skills:

*“I would say negotiation skills because if alternative ideas are not helpful towards achieving the team’s goals then you need to be persuasive to get teammates back on common ground” (S6).*

Interestingly, one participant commented on the need for *intrapersonal* skills for successful teamworking:

*“Logic in order to collect and organise information appropriate to task requirement. Active listening skills and project management skills. Being polite and respectful of others. Intrapersonal skills ... self-reflection” (S11).*

This finding is notable because it draws attention to just how important it is for educators to help develop students’ reflective abilities. Training in reflective practice (Schön, 1987) enables students to become more conscious and evaluative of their own behaviour; in turn, that can help them recognise and build on the strengths of the team and address its weaknesses. This is consistent with the view of Bolton (1999) who contended that if teams do not reflect on their failures, little is learned from the experience except an aversion to teamwork. However, reflecting on practice is more than ‘looking back and as such, its meaning should be expanded to include the tools of

critical analysis so that reflection is oriented to social as well as personal change (Plack & Greenberg, 2005). This view was certainly embraced by S11.

From the student perspective, the teamwork competencies that an individual must possess in order to support team member interaction, and team processes leading to overall team effectiveness are shown in Table 22.

**Table 22: Individually-held Teamwork Skills and Personal Attributes: Students' Perspective**

<i>Personal Attributes needed for Teamwork</i>			
• Able to deal with pressure	• Flexible/Adaptable	• A Sense of Humour	• Well-mannered/Polite/Respects Others
• Motivation/Initiative	• Honesty/Integrity	• Enthusiastic	• Friendly/Open-minded
• Commitment	• Nonjudgmental	• Encouraging	• Supportive/Helpful
<i>Skill</i>	<i>Facet of the skill identified as important</i>	<i>Skill</i>	<i>Facet of the skill identified as important</i>
Communication	<ul style="list-style-type: none"> <li>• Listening without interrupting</li> <li>• Speaking clearly and directly</li> <li>• Empathising and Building trust</li> <li>• Understanding the needs of team members</li> <li>• Sharing information</li> <li>• Being assertive not aggressive</li> </ul>	Leadership	<ul style="list-style-type: none"> <li>• Acting decisively, in timely manner</li> <li>• Generating ideas</li> <li>• Providing direction</li> <li>• Creating and promoting a shared vision</li> <li>• Empowering team members to achieve goals</li> </ul>
Problem-solving	<ul style="list-style-type: none"> <li>• Prioritising issues</li> <li>• Defining task</li> <li>• Balancing the needs of team members</li> <li>• Collecting and interpreting suitability of information</li> </ul>	Organising	<ul style="list-style-type: none"> <li>• Keeping others informed</li> <li>• Monitoring actions</li> <li>• Assisting with problems</li> <li>• Gathering, evaluating and reporting</li> </ul>
Negotiation	<ul style="list-style-type: none"> <li>• Approaching negotiations persuasively</li> <li>• Setting out objectives</li> <li>• Listening to alternative ideas</li> </ul>	Conflict resolution	<ul style="list-style-type: none"> <li>• Recognising difficult situations</li> <li>• Compromising for a win-win outcome</li> </ul>
Decision-making	<ul style="list-style-type: none"> <li>• Recognising the need for a decision</li> <li>• Collecting and organising information</li> <li>• Checking facts and opinions</li> </ul>	Interpersonal	<ul style="list-style-type: none"> <li>• Interested in others</li> <li>• Building rapport</li> <li>• Providing feedback without animosity</li> </ul>
Project Management	<ul style="list-style-type: none"> <li>• Breaking down of tasks</li> <li>• Formulating action plans</li> </ul>	Cultural Awareness/Intelligence	<ul style="list-style-type: none"> <li>• Sensitive and responsive to people who differ from oneself</li> </ul>
Research	<ul style="list-style-type: none"> <li>• Identifying, evaluating and reporting</li> </ul>	Intrapersonal	<ul style="list-style-type: none"> <li>• Engaging in self-reflection</li> </ul>

With respect to the findings, as displayed in Table 22, it can be seen that the teamwork competencies that an individual must possess in order to support team member interaction and team processes from the student perspective encompass 12 personal attributes and skills. As stated earlier, respondents cited communication skills to be *most* critical to effective teamworking. This finding corresponds to relevant team literature. Participants' distinction of other teamwork competencies such as problem-solving, decision-making, negotiation and leadership is self-explanatory; as one student aptly stated: "*ultimately decisions do have to be made*" (S6). Of particular interest, is the distinction of cultural awareness/intelligence as a core teamwork competency. This finding is significant as it appears that this competency has yet to be identified in previous, albeit limited, studies examining student perspectives about teamwork. Though notable, the finding is not really surprising when considering the diversity of today's student population. The need for intercultural competence perhaps is best emphasised by Sternberg (2004, p. 325) who stated: "behaviour that in one cultural context is smart may be, in another cultural context, stupid". Thus, the new economy demands that individuals know how to suspend judgements in diverse teams until multiple cues gathered about the other member(s) can be assessed and integrated so that cultural blunders can be avoided and synergistic outcomes can be achieved more effectively (Hampden-Turner & Trompenaars, 2006; Triandis, 2006). This was clearly evident among students in the present study; hence, the inclusion of cultural awareness/intelligence as a subskill of teamwork skills.

The 12 personal attributes identified as part of the teamwork skill set include: able to cope/deal with pressure; motivation/initiative; commitment; flexible/adaptable; nonjudgmental; enthusiastic; well-mannered/polite/respects others; honesty/integrity; encouraging; friendly/open-minded; supportive/helpful; and, a sense of humour. The expression of the latter is consistent with the views of Valdez (2006, p. 2) who stated that "humor can be a powerful tool for group morale, especially when predicated on mutual respect. Jokes belie a sense of optimism that is necessary to success, because failure is a part of the learning process". Indeed, happy, vibrant team members are likely to achieve more productivity.

### **6.3.3.1 Summary**

The framework and associated propositions put forth by the author in the preceding section represent a systematic attempt to discover the notion of team competencies held at the individual level as it relates to student teams in HE from the perspective of those directly involved, namely the students themselves. Findings indicate that the students' concept of what constitutes a team is consistent with extant team literature. Also, the findings suggest that students, at least in the present study, are aware of the behaviours that characterise effective teamwork; however, there is an identified need for students to engage more in self-reflective practices. The identified teamwork behaviours are in keeping with those advanced in the interim research outcomes model (Figure 23, p. 157). Three *new* teamwork behaviours were distinguished; namely, information sharing, review/modify and negotiation. In addition, the individually-held teamwork skills and personal attributes that one must possess to support the interaction between team members and team processes leading to team effectiveness have been identified.

In the next section of the current chapter the perspectives of employers are presented and discussed.

## **6.4 Findings and Discussion: Employer Interviews**

### **6.4.1 Introduction**

Interviews were held with employers at a time and place convenient to both parties. The interviewees were given a copy of the schedule at the time of the interview and they indicated that they fully understood all of the questions that were to be asked. Notably, a number of participants said that a discussion about teamwork skills was a return to issues of previous years; issues that had not been adequately addressed and were even more important to today given the demands of high performance organisations.

The author was impressed with the pleasantness of respondents—many welcomed the opportunity to share their viewpoints and opinions, with some continuing to speak

candidly even after all of the scheduled questions had been addressed. Many respondents expressed a strong desire for an opportunity to speak directly to students and felt that universities could do more to facilitate this (e.g., offering guest lecturers or hosting open days) as they are key players in the system. The findings are grouped under three general headings in line with the interview schedule and the themes that emerged to enable a more directed analysis and discussion.

#### **6.4.2 Skills Expected in New Business Graduates**

As stated earlier, identifying the skills required of graduates and the skills perceived to be acquired as a result of an undergraduate degree can provide critical information in terms of curriculum design—learning activities should ensure that the skills being developed reflect those required by employers. Accordingly, the first question asked of employers helped to formulate a profile of key generic skills that they look for in recruiting new graduates, particularly the importance attributed to teamwork skills within this skill set. The question is similar to that asked of students so as to enable comparisons and identify any significant differences or mismatches.

Typical responses to the question ‘What are the top five key generic skills that you, as an employer, expect in an entry-level business graduate?’ evidenced a mix of both skills and personal qualities:

*“Teamwork skills and maturity in terms of discretion about handling company/client information, humour and appropriate dress. They need to have good analytical skills, liaison skills (diplomacy, tact), negotiation skills, and communication skills, particularly written form” (E1).*

*“Excellent communication skills, particularly active listening and teamwork skills. Honesty and the ability to take criticism in a positive manner. They need to have self-management skills (initiative, adaptable, follow ethical guidelines) and an understanding of business basics” (E2).*

*“Most important, teamwork skills and communication skills, especially report writing and for making small talk. A willingness to learn, upskill,*

*improve oneself. Also a must are problem-solving skills and cultural sensitivity” (E3).*

As can be seen from the statements above, employers cited a range of generic skills they want most in business graduates, regardless of industry type. Further, although there were differing emphases, all employers distinguished personal attributes or behavioural competencies as part of this needed skill set. This is consistent with recent literature examining generic competencies required of graduates that suggests that employers now place major emphases on personal attributes, both in recruitment for employment and performance on the job (Hodges & Burchell, 2003).

Upon closer analysis of the data, teamwork was identified as the *most* important skill by employers. They also distinguished communication skills, especially competency in active listening and writing. Further, a small proportion of employers said they want graduates who not only can add value to the organisation but also move it forward, as indicated in the comment below:

*“I want graduates who are good communicators (active listening) and detail-oriented. They must be tolerant and able to generate ideas, to add value to the organisation. A willingness to learn/upskill and manage their career. Of course, teamwork skills and risk management skills” (E9).*

The above comment is in keeping with Harvey, Burrows, and Green (1992) who noted that employers want graduates ‘who can make an impression’ on the way an organisation functions. This focus on *transformative potential* (Harvey & Mason, 1996) perhaps explains why employers are often criticised for expecting too much of HE and what it can reasonably supply—a graduate prepared to demonstrate what the employer wants now and in the future. Indeed, this has led some to question whether ‘it is inevitable that employers will be dissatisfied’. Notwithstanding, a strong business acumen is of particular relevance to today’s economic downturn and the looming of a second global financial crisis (GFC). The other top rated skills identified by participants are shown in Table 23 and include: business/commercial awareness; interpersonal;

analytical/problem-solving; creative/innovation; negotiation; self-management/understanding; time and stress management; risk management; and cultural awareness.

**Table 23: Top Five Skills and Attributes Required of Business Entrants: Employers' Perspective**

	<i>Generic Skills</i>	<i>Personal Attributes</i>
Order of Importance		
1	<ul style="list-style-type: none"> <li>• Teamwork</li> </ul>	<ul style="list-style-type: none"> <li>• Professionalism/Business Etiquette (includes well-mannered/polite/respects others)</li> <li>• Willingness to Learn</li> <li>• Flexible/Adaptable</li> </ul>
2	<ul style="list-style-type: none"> <li>• Communication</li> </ul>	<ul style="list-style-type: none"> <li>• Positive Attitude</li> <li>• Motivated/Initiative</li> <li>• Strong Work Ethic</li> </ul>
3	<ul style="list-style-type: none"> <li>• Business/Commercial Awareness</li> <li>• Interpersonal</li> </ul>	<ul style="list-style-type: none"> <li>• Honesty/Integrity</li> <li>• Commitment</li> </ul>
4	<ul style="list-style-type: none"> <li>• Analytical/Problem-solving</li> <li>• Creative/Innovative</li> <li>• Negotiation</li> </ul>	<ul style="list-style-type: none"> <li>• Detail-oriented</li> </ul>
5	<ul style="list-style-type: none"> <li>• Self-management/understanding</li> <li>• Time and Stress Management</li> <li>• Risk Management</li> <li>• Cultural Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Solicits/Receives Feedback</li> <li>• Leadership qualities</li> </ul>

Note: Rating, 1 = Most Important

As displayed in Table 23, a graduate's professionalism/business etiquette and willingness to learn were considered to be two important personal attributes of business entrants to the workforce; the latter underpinned by reflective activity and also considered to be an important attribute in two recent studies (e.g., Coll, Zegwaard, & Hodges, 2002; Burchell, Hodges, & Rainsbury, 2001). Other personal attributes respondents said they wanted most in their new business recruits include: flexibility/adaptability; positive attitude; motivated/initiative; strong work ethic; honesty/integrity; commitment; detail-oriented; solicits/receives feedback; and, leadership qualities.

Of particular note is the absence of computer literacy as seen with past studies of (business) employer rankings on key generic skills required of graduates. It is likely that in an age dominated by rapid technological change and social media such as Facebook, Twitter and other online communities, computer skills are considered 'a given'. Further notable and unexpected findings in the present study compared with business employers' views in past studies (e.g., ACNielsen, 2000; Precision Consulting, 2007) were the skills of business/commercial awareness, risk management and cultural awareness, and the personal attributes of professionalism/business etiquette, strong work ethic and detail-oriented.

With respect to cultural awareness, for example, the current findings clearly indicated that business leaders, irrespective of organisation, are increasingly seeking graduates who can communicate across cultures and work coherently within diverse teams. This is not surprising as cultural diversity is a growing global phenomenon and one that students need specific skills and understandings to manage effectively.

In relation to the professionalism/business etiquette, the current findings make an explicit statement about graduates' general attitudes and the presentation and conduct of oneself as fundamental to their success at entry-level and sustaining meaningful employment. By far, employers appear to be saying that what they want, aside from a range of key generic skills, is really just a combination of "personality traits, social graces, facility with language, and personal habits that many older working people take for granted" (Houghton & Proscio, 2001, p. 5). This takes on particular significance as today's workplaces essentially are comprised of four generations (traditionalists, baby boomers, Generation Xs and Generation Ys) each with a different frame of reference in terms of values, expectations and behaviours. However, according to Floyd and Gordon (1998, p. 104), "the difficulty with personality-related criteria is that institutions can do little to develop them in students". This aside, the findings confirm that there is a need for new entrants to have an understanding at least of the generational identities shaping the organisation's culture in order to increase their ability to integrate and navigate successfully within that environment.

### **6.4.2.1 Summary**

The findings in this section showed that business graduates need to possess a multifarious skill set to be competitive and succeed in the workplace. Employers identified teamwork skills, including the ability to participate effectively in diverse teams, as a critical competency required. Of equal importance to these skills are the personality traits and values which are seen as signs of maturity and commitment to professionalism and which employers expect graduates to demonstrate.

### **6.4.3 Elements of an Effective Team and its Members**

The questions in the second part of the interview were asked to gain an understanding of the elements of an effective team and the set of skills needed for successful teamwork from the employer perspective. Again, the questions posed were similar to those asked of students so as to enable comparison of both parties' views and the answering of the research questions developed for this strand of the study.

As a frame of reference for understanding what employers perceive a team to be, they were first asked: 'What is your definition of a team in relation to the workplace'? Typical comments included:

*"A team is a group of people with complementary skills working collectively to achieve a common goal" (E2).*

*"It's a group of people working collaboratively ... in unison ... towards the achievement of a common goal. Everyone is aware of the tasks and contributes fairly in order to achieve the goal" (E5).*

*"A team is usually a small group of individuals from different departments who coordinate their efforts for a particular project and are responsible for delivering the product on time and within budget" (E8).*

These comments are consistent with prevailing definitions of work teams. Specifically, work teams are “interdependent collections of individuals who share responsibility for specific outcomes for their organisations” (Sundstrom et al., 1990, p. 120).

The second question asked of employers was: ‘Visualising an effective team within your organisation, what key elements made the team successful’? Analysis of the data showed that responses revolved around six main themes: (i) common goals and a shared approach; (ii) clarity of roles and responsibilities; (iii) team leadership; (iv) collaborative problem-solving; (v) competent team members; and (vi) a climate of trust. These themes align with issues important to student teams as discussed in earlier chapters of this report. This finding is informative in light of increasing attention in issues facing organisational teams, specifically the inputs and outputs that bound, constrain and impact on team processes within organisations (Ilgen, 1999).

(i) Common goals and shared approach

Extant literature consistently highlights that one of the essential elements of any team is its focus towards a common goal and a clear purpose (Parker, 1990; Katzenbach & Smith, 2003). This was clearly recognised by employers as reflected in their definitions of what a team is. Literature also has indicated that there is a strong relationship between successful teams, cooperative learning theory and social interdependence; “social interdependence exists when individuals share common goals; each individual’s outcomes are affected by the actions of others” (Johnson & Johnson, 1995, p. 206). This view was echoed also by respondents in the current research:

*“By emphasising the goals and expectations we reduce ambiguity and can move forward in our roles, collecting as much useful information as possible to achieve those goals” (E6).*

*“Clear goals and a focused brief with which to work provides the team with structure and direction, everyone understands what is expected. This is important with differing opinions, expertise, etc. It allows us to be effective team members” (E2).*

And, in the absence of goals:

*“When we have clear goals, teammates are committed to the team ... to each other. But when they’re fuzzy or huge blanket type statements, the team unravels, we become like dominoes”* (E7).

In essence, the findings show that team goals contribute to a shared vision and it is this vision that places focus on *“how to take action and work with stakeholders”* (E5), how decisions should be implemented and so forth. As expected, the findings also revealed that many respondents referred to the need for *“regular performance reviews and timely feedback to facilitate learning”* (E10) in relation to goals. This is consistent with Locke and Latham (1990) who noted that without feedback team members lose the opportunity to adjust ineffective behaviours in order to improve performance.

According to Tarricone and Luca (2002), in order to achieve shared goals, individuals have to be flexible and adaptable enough to work in an environment where goals are achieved through collaboration and social interdependence rather than individualistic or competitive means (Tarricone & Luca, 2002). This assertion is supported by findings in the present study, where one participant aptly stated:

*“Even in the most well-functioning team there will be ups and downs. What can you expect when working with different personalities, sharing their opinions, views, suggestions or whatever ... sometimes contrary to your own. You have to adapt, make the most of it, roll with the punches”* (E3).

(ii) Clarity of roles and responsibilities

The team situation requires that members *“have a clear understanding of what your roles and responsibilities are within the team”* (E4). This understanding extends also to ensuring that *“when or if you need help, you know who to go to ... who has the skills and expertise”* (E8).

One respondent in particular attached monetary significance to the assignment of roles to team members and highlighted the interrelationship between open communication and overall team functioning:

*“Open communication between members is critical so you know what your roles are ... your role enables you to work effectively, responsibly, and manage your time wisely. Time is money and if you don’t know your role or you choose not to follow it then you’re slowing the team down toward achieving the common goal and essentially costing money”* (E5).

Not surprisingly, it was found that the majority of participants also considered that *“it is the team leader’s responsibility to set the goals and ensure alignment with each member’s skill set and talents”* (E5).

(iii) Team leadership

Leadership is defined as the ability to coordinate and supervise team members’ activities, assess team performance, assign tasks, plan and organise, and establish a positive atmosphere for team interaction (O’Neil, Jr., Chung, & Brown, 1997). It is critical then, that team leaders possess the knowledge and skills that enable and encourage effective teamworking. According to contemporary leadership scholars, the development of a vision, the proper alignment of people and the ability to motivate and inspire others through to task completion are the characteristics of good team leaders. These sentiments are expressed in the following comment:

*“Effective leaders are authentic, genuine and they don’t sit on their hands. A good team leader has really good communication skills, is observant, recognises team members’ skills and uniqueness and utilises them. He monitors performance at task level, providing direction when needed, and praises teammates’ efforts”* (E8).

However, as another respondent noted:

*“Just because you’re not ‘team leader’ doesn’t mean that you’re exempt from leading by example. Accepting the differences among teammates is challenging for sure but the rewards for encouraging each other to do their best and monitoring performance is vital to the betterment of the team. Everyone can’t be the leader but everyone can be a team player” (E3).*

(iv) Collaborative problem-solving

All respondents commented that problem-solving lies at the heart of most team projects. Some respondents spoke of finding solutions to complex problems as a creative act involving informed dialogue among team members. For example:

*“In order to remedy the undesirable situation we first have to tear it apart and consider as many specific facets and the interrelationships as possible. This means that all team members must bring to the table informed recommendations/suggestions/solutions for discussion” (E10).*

Another participant spoke of teammates as having the capacity to find and take advantages of opportunities:

*“Like the proverbial saying goes, two heads are better than one when it comes down to handling a difficult problem. So, no idea is a bad idea for solving problems” (E11).*

In addition, some respondents linked the importance of problem-solving to the provision of major external stakeholders and highlighted the importance of social competencies in this context, specifically the openness and personability of teammates:

*“Our company has a few high profile clients who can be very demanding or ‘high maintenance’. But when \_\_\_ is part of the team, things move like clockwork. It’s because \_\_\_ really listens to their needs and is straightforward when it comes to giving them options to resolve the problem. He is honest about the associated costs and clients respect that” (E4).*

*“I always like having \_\_\_ in my team because he’s always willing to deal with problems and has a real knack of speaking direct with clients without putting them offside” (E9).*

On the other hand there were teammates who were not seen as open and willing to deal with problems:

*“Unfortunately, we have a team members who tends to be a bit cynical, defensive and are not really open to input or offers of possible solutions. This is being translated to the client, to the point where we may lose that client and no one wants that to happen, especially with the downturn in the economy” (E6).*

In general, these findings are consistent with those of LaFasto and Larson (2001, p. 8) who found that team members who are open tend to be “effective communicators, helping to create a climate in which communication flourishes and is used effectively to resolve whatever problems the team confronts to improve the teams’ performance”.

(v) Individual competencies

“Among the top predictors of a team’s effectiveness are the qualities of the individuals who make up the team: the skills and competencies they possess, the attitudes they display, the behaviours they engage in” (LaFasto & Larson, 2001, pp. 2-3). Essentially, *“a team is only as good as the individuals within the team” (E6).*

Findings indicated that regardless of whether or not a team has consistent membership, individual members need to possess the necessary intellect, skills and personal attributes for effective team functioning. Also, for a team to be successful, individuals need to know what their own strengths are as well as those of their teammates so that there can be a correct balancing of tasks:

*“We assumed that one of our teammates was brilliant on the computer because he could do all this presentation stuff that the rest of us weren’t too familiar with. Also, whenever there was a problem with one of the computers or the*

*server he was right there to fix it. So, we were rather surprised when after a few weeks he still didn't have the spreadsheets ready for the client. We should not have assumed he could do what needed to be done ... and he should have piped us and told us at the start" (E9).*

Implicit in the statement are the teamwork behaviours of performance monitoring and back-up behaviour. Also, the comment highlights the association with role definition discussed earlier.

(vi) A climate of trust

Respondents identified “a climate of trust” as a crucial element to team success. Respondents stated that open communication among team members such as “*being able to talk openly with each other*” (E2) and “*not being afraid to say what's on your mind*” (E7) promoted a climate of trust and vice versa; that is, when respondents perceived high trust levels, “*critical issues get discussed and the team's goals take centre stage rather than a teammate's personal agenda*” (E11). This link between trust, communication and effective team functioning is well established in the literature (Butler & Cantrell, 1994).

The results showed that being “*supportive and always willing to help out*” (E3), “*honest and genuinely making teammates feel like they count*” (E1), and “*thorough and detail-oriented*” (E8) were considered as expressions of commitment to the team, thus promoting an even greater sense of trust. These findings correspond to what experts refer to as the ‘Be a STAR’ approach for building trust. Specifically, this method focuses on being **supportive** of teammates (e.g., recognising accomplishments, giving credit where it is due, valuing input, not badmouthing one another behind their backs), being **truthful** with them (e.g., maintains confidentiality, gives and receives feedback), being **accountable** for actions as a team (e.g., members perceive and admit everyone's mistakes, including their own, as team mistakes), and acting in consistent ways that teammates can **rely** on (e.g., predictability and ‘walking the talk’).

Further, the findings point to the larger corporate climate as greatly impacting on team members’ sense of trust—organisations that create competitive team environments and

opposed to those that value promotive team environments where “*fellowship is encouraged and individuals can excel in their team roles*” (E1). This finding supports the work of Scarnati (2001) who also identified corporate culture as one of the factors within businesses that can either support or hinder teamwork and team success.

The last question in this stage of the interview asked employers: ‘What specific generic skills and/or personal attributes does an individual need to have to perform successfully in a team?’ The results from analysis of participants’ comments showed that there was much variation in the specific skills and personal attributes that constitute teamwork skills needed for practice. Although teamwork was unequivocally distinguished as the *most* important skill set expected in new business entrants in the findings of the present study, it would seem that teamwork skills are most difficult to identify and describe, as the following comments suggest:

*“That’s the million dollar question right there isn’t it? I mean, what skills aren’t needed for teamwork? Then there are the character traits, if a person even has the capacity to work successfully in a team”* (E10).

*“There is no simple answer to that question ... the skills needed for teamwork are much like a bag of licorice allsorts really ... a mixture of abilities and qualities all stuck together, integral to the whole”* (E5).

Using the licorice sweets as a metaphor for teamwork skills then, despite the variety of licorice cubes within each bag, and within each separate cube itself, it is possible to peel away the layers to find some points of similarity.

The findings of the present study indicate that, from the employers’ perspective the individually-held skills needed to perform successfully in a team include: communication; negotiation and conflict resolution; interpersonal; problem-solving; decision-making; planning and organising; cultural awareness; and leadership skills. Therefore, it would appear that employers perceive ‘teamwork skills’ to be a compendium of several other important generic skills. It follows then, that describing teamwork skills simply as ‘the ability to work well with others and in teams’, which is

common in the literature, is at odds with the complexities of the construct itself. The identified teamwork skill set in the present study is supported by previous research insofar as five of the nine categories of skills identified are consistent with the findings of O'Neil, Jr., Allred, and Baker (1997) who examined several major frameworks (e.g., SCANS, ASTD) in an attempt to more accurately define teamwork skills. The five skills in common are negotiation, conflict resolution, interpersonal, leadership and the ability to work with others from diverse backgrounds, which is referred to as 'cultural awareness' in the present study.

In relation to the 13 personal attributes that respondents in the present study identified as part of the teamwork skill set, these include: flexible/adaptable; honest; tolerant; positive self-esteem; conscientious (detail-oriented); open-minded; motivated; self-aware; cooperative/supportive/helpful; respect for others; willingness to learn; resourceful; and responsible/dependable. This finding largely corresponds with Driskell et al.'s (2006) work on the specific personality facets that are relevant to team effectiveness; specifically, flexibility (as a facet of openness), cooperative (as a facet of agreeableness), responsible/dependable (as a facet of conscientiousness) and self-esteem (as a facet of emotional stability).

The fact that, in the present study, it was found that *“one of the most important skills needed for teamwork is the ability to communicate effectively, clearly and concisely”* (E9) should not be surprising as communication is a process inherent to all relational contexts. Although there are many ways in which communication skills can be used in a team setting (e.g., undertaking formal presentations, contributing to team discussions), the findings showed that all participants agreed that spelling, grammar and vocabulary are the basic tenets from which all else follows. For example:

*“Communication skills are by default a definite for teamwork and that in itself covers an enormous range of things, but if a person has a grasp of the fundamentals then he/she should be able to write up the report on behalf of the team for example”* (E4).

The findings also indicated that the communicative context in which individuals are involved in must be thoughtfully considered. For example, the language or “*choice of words, especially the technical jargon thrown around has to be adjusted according to what team you’re engaged in at the time*” (E9). This reference to ‘team-hopping’ highlights again the significance of being able to communicate and interact with people throughout all levels of an organisation. In addition, it was found that too much communication can create confusion and stymie task coordination. This is consistent with previous research where it was found that more communication does not always translate into positive outcomes (Tesluk & Mathieu, 1999).

There was consensus that to be an effective team member one must be equipped with planning and organising skills:

*“Planning provides a map of the terrain. Teammates have to be careful not to jump the gun because things that get missed at the planning stage can cost huge dollars later into the project”* (E5).

*“There have been occasions when some teammates have said there there’s no time to plan because of deadlines fast approaching, etc. But, the success of a team depends a lot on how well team members can plan and organise themselves ... as the saying goes, do you plan to fail or fail to plan? Planning is a crucial element of every project - it allows team members to capture and track the project path and protect against scope creep”* (E10).

And,

*“It’s no good having a team full of enthused people with lots of creative ideas if no one has the skills to plan a course of action, organise the resources/materials required or identify and manage risks”* (E11).

As these results demonstrate, it can be easy for a team of people who are under pressure from various directions to lose focus on what they need to do in order to achieve results. The findings also indicate though, that planning facilitates management by objectives, minimizes uncertainties, assists coordination, leads to better utilization of possible

resources and, in the process of planning, team members have the opportunity to suggest creative ways of improving performance. Hence, effective planning and organising are valuable and necessary teamwork skills that make overall performance attainable.

Finally, with respect to the dimension of decision-making, all respondents emphasised how important it is that team members “*reach a conclusion after carefully examining the information against, as well as in favour, of a position*” (E11). Implicit in this statement is that the data/material must be collected and well organised so that team members, intelligently and rigorously can go through the possible courses of action/solutions before even making a decision. As one respondent stated, “*making an informed, objective decision after careful deliberation and debate is crucial to being a good team member*” (E4).

From the employers’ perspective the identified individually-held teamwork competencies that are needed to support team member interaction and team processes, leading to overall team effectiveness are shown in Table 24, over page.

**Table 24: Individually-held Teamwork Skills and Personal Attributes: Employers' Perspective**

<i>Personal Attributes needed for Teamwork</i>			
• Motivation/Initiative	• Tolerant	• Self-aware	• Resourceful
• Flexible/Adaptable	• Positive self-esteem	• Willingness to Learn	• Friendly/Open-minded
• Conscientious (Detail-oriented)	• Honesty/Integrity	• Cooperative/Supportive	• Responsible/Dependable
• Well-mannered//Respects Others			
<i>Skill</i>	<i>Facet of the skill identified as important</i>	<i>Skill</i>	<i>Facet of the skill identified as important</i>
Communication	<ul style="list-style-type: none"> <li>• Listening attentively</li> <li>• Speaking &amp; writing clearly and concisely in formal and informal situations</li> <li>• Building trust</li> <li>• Speaking to people at all levels of management &amp; external stakeholders</li> <li>• Speaking to the needs of the audience</li> <li>• Sharing information</li> </ul>	Leadership	<ul style="list-style-type: none"> <li>• Generating ideas</li> <li>• Providing direction</li> <li>• Creating and promoting a shared vision</li> <li>• Empowering team members to achieve goals</li> <li>• Considers nature of task in allocating roles</li> </ul>
Problem-solving	<ul style="list-style-type: none"> <li>• Identifying central issues of a problem</li> <li>• Developing practical &amp; innovative solutions</li> <li>• Resolving the needs of client in relation to complex problems</li> <li>• Evaluating solutions to improve performance</li> </ul>	Planning and organising	<ul style="list-style-type: none"> <li>• Making good use of time and resources</li> <li>• Keeping others informed</li> <li>• Monitoring actions</li> <li>• Assisting with problems</li> <li>• Gathering, evaluating and reporting</li> </ul>
Decision-making	<ul style="list-style-type: none"> <li>• Recognising the need for a decision</li> <li>• Collecting and organising information</li> <li>• Checking facts and opinions</li> </ul>	Interpersonal	<ul style="list-style-type: none"> <li>• Interested in others</li> <li>• Building rapport</li> <li>• Providing feedback without animosity</li> </ul>
Negotiation	<ul style="list-style-type: none"> <li>• Approaching negotiations persuasively</li> <li>• Setting out objectives</li> <li>• Listening to alternative ideas</li> </ul>	Conflict resolution	<ul style="list-style-type: none"> <li>• Recognising difficult situations</li> <li>• Compromising for a win-win outcome</li> </ul>
Cultural Awareness	<ul style="list-style-type: none"> <li>• Sensitive and responsive to people who differ from oneself</li> </ul>		

### **6.4.3.1 Summary**

The findings in the previous section showed that employers recognise a team to be a group of individuals cooperatively working together towards the achievement of a common goal. Also, it was found that employers characterised effective work teams by clear goals and a shared approach, a unified commitment, strong team leadership, collaborative problem-solving and competent team members who can contribute to the team in terms of intellect, skills and personal attributes, and who are clear about what is expected of them individually and collectively. In addition, the findings clearly indicated that successful work teams have a climate of trust that is created and promoted by open communication, honesty, accountability and supportive and respectful behaviour.

In this section it was also identified that teamwork skills are actually a *compendium* of several important generic skills intertwined with a number of personal attributes. Further noteworthy, because individuals are expected to ‘team-hop’ or perform in several teams within an organisation, they must be able to draw from their teamwork competency profile and utilise particular skills as per their respective team member role and associated responsibilities. In the present study, the individually-held teamwork competencies needed to promote team member interaction and teamwork, leading to team effectiveness, have been identified from the employer perspective.

### **6.4.4 Perceptions about Teamwork Deficiencies in New Business Graduates**

The final question asked in the interview process set out to establish what teamwork skills new business graduates are lacking, if any. The question asked was: ‘Has there been a difference between what teamwork skills you expected graduates to have at entry into employment and what they actually demonstrated’?

The findings indicated that employers were somewhat divided as to whether they considered that new business entrants were deficient in the teamwork skill set developed through their university studies and other life experiences. For example, several employers conceded that they did not expect new graduates to make team-level

decisions and therefore they could not identify an initial skills deficiency. Similarly, another employer stated:

*“Because graduates do not yet understand the commercial priorities of the organisation, they are not expected to lead their own teams. But, we still expect them to identify trends and know what is happening topically with our major competitors so they can make insightful contributions to the team”* (E4).

This suggests that employers expect graduates’ leadership skills (as a subskill of teamwork) to develop through industry experience/maturity. The finding is consistent with earlier findings in the present study in that while employers noted the critical nature of team leadership to successful team performance, they did not identify leadership skills as one of the most important generic skills expected in new entrants (see Table 23, p. 180). Notably, the comment above also gives emphasis to the need for new entrants to have a greater understanding of, and a focus on, the marketplace in which a business or organisation operates. This again is consistent with earlier findings that commercial awareness is one of the top five skills expected in business graduates (see Table 23).

Overall, the findings showed that of the teamwork skills which new graduates are expected to employ, communication and interpersonal skills appear to be the most deficient, especially in basics such as language and writing legibly. That employers were found to be less than satisfied with overall communication skills of their new hires replicates that of Hodges and Burchell (2003), Stevens (2005) and the ACNielsen (2000) report. The finding is informative in that there have been very few recent studies published regarding employers’ perceptions of the communication skills of graduates (Stevens, 2005).

In the present study, employers’ comments consistently focused on evidence of poor grammar; e.g., the misuse of homophones (e.g., their/they’re/there), apostrophes, tenses and the lack of understanding of punctuation. *“Even when compiling a list, many graduates do not know when to use a colon versus a semi-colon”* (E1), wrote one employer. Several respondents also criticised the lack of attention to detail, citing

typographical errors and inconsistency of fonts, colours and the layout of reports, presentations and emails. As one respondent commented:

*“There is a huge gap in graduates’ written skills. The lack of detail in report formatting and layout has enormous potential to reflect negatively on the organisation itself, particularly when dealing with external stakeholders i.e., potential clients. Reports have to be put out professionally, it’s as simple as that. There is an image to uphold which many graduates seem completely oblivious of”* (E11).

Another wrote, *“the rule is that proofreading materials before submitting or sending it out is a must, but a lot of graduates can’t proofread. They rely on spellcheck to correct their poor sentence structure and spelling mistakes”* (E6).

Clearly, a more rigorous curriculum with higher standards in communication is needed to resolve such employer concerns.

Focusing specifically on email as a form of communication, all respondents expressed a need for improved email etiquette. Several respondents spoke of the need for graduates to keep emails short and concise, getting to the important details at once. There was also criticism about the appropriateness of graduates’ email writing styles. For example, one respondent said that *“simple tokens like ‘please’ and ‘thank you’ are often absent in graduates’ emails which reflects negatively on the team because we come across as rude and demanding to the client”* (E2). Another employer said that *“the use of abbreviations, slang or colloquialisms, and emoticons needs to be removed from business email communications”* (E9). These responses demonstrate that graduate employees need to have a greater understanding of the important role of email as a professional channel of business communication.

Respondents also identified the need for stronger verbal communication skills, especially vocabulary used when speaking and interacting with individuals from different levels of the organisation. For example, one employer stressed:

*“When speaking to senior level managers on your team, words such as ‘cool’ or ‘awesome’ sound really flippant and unprofessional. Graduates need to expand their vocab, use phrases like ‘very well received’ or ‘fantastic’. This is business not lunch at the café with mates” (E10).*

Another respondent spoke of their shock in relation to graduates’ behaviour:

*“Many graduates do not know how to interact with people at different levels of the company or with clients. They can become too familiar too soon and that can be really offensive. I’ve had countless graduates refer to senior level clients as ‘mate’ the first time sitting down with them. I’ve also had graduates attempt to sit behind managers’ desks at the start of a team meeting instead of waiting for the PA to get some more chairs. These are things that you just don’t do. There needs to a greater respect for boundaries” (E7).*

Also, several respondents stressed the need for graduates to put forth an idea or solution succinctly as they can come across as longwinded and not intimately knowing whatever it is they are trying to describe. Employers also wanted better interpersonal skills (as evident in the comment immediately above) and increased levels of supportive behaviours extended to other members of the team. As one respondent said, *“mainly they are lacking interpersonal skills in terms of their level of helpfulness and interest in others” (E6)* while another employer commented, *“a pat on the back is only a few vertebrae away from a kick in the pants, but is miles ahead in results” (E5).*

Finally, with respect to the gap between expectations and performance as related to graduates’ attitudinal attributes, several respondents criticised the arrogance of graduates, particularly in terms of a lack of willingness to respect the skills and expertise of other team members irrespective of age. They were also unimpressed by graduates’ autocratic and disparaging style of communication when ideas and opinions from other team members differed from their own. As one employer stated:

*“Generally, there is a poor attitude towards teamwork. Many graduates prefer to work on their own and some are vocal about that! For others who feel the same, it comes through in their actions ... they shoot down input from other*

*teammates without really listening to what was said. It's a 'me' style attitude"*  
(E10).

In line with this comment, some employers said that graduates have an impatient and bored outlook during team meetings, which is not appreciated by fellow teammates. Clearly, such behaviour can seriously negate team member interaction and performance. According to Haan, Britt, and Weinstein (2007), very little has been written about this phenomenon but the academic literature concerning arrogance generally puts it at the opposite end of a spectrum from humility; where humility is viewed as a desirable trait in people whereas arrogance is socially undesirable. In terms of arrogant communications, it has been suggested that this indicates to others that this person sees him or herself as being better than others (Wosinska, Dabul, Whetstone-Dion, & Cialdini, 1996), whereas communication that is perceived as being humble suggests that the communicator has qualities and values that are the same as most people's (Ben-Ze'ev, 1993).

#### **6.4.4.1 Summary**

The findings in this section showed that employers believed that the communication and interpersonal skills of new entrants to the business workforce needed improvement. They identified the need for much stronger written and verbal communication skills, especially a better command of the English language in terms of basic spelling, grammar and vocabulary. Students need to be reminded of the importance of well-developed communication skills in all aspects of professional life and educators can help by adopting more rigorous editing standards in their courses. Employers said that graduates' email etiquette at the workplace needed to be developed, especially as electronic communication is the most efficient link for facilitating effective interaction between people, clients and organisations. Responses showed that employers believed that the interpersonal skills of business graduates were deficient and counterproductive to teamworking efforts. Serious concerns were raised in relation to graduates' attitudinal attributes, especially as related to arrogance and other nonsupportive behaviours.

In the following section a concluding statement of findings in relation to the two research questions developed for Strand Two of the current research is provided.

## 6.5 Concluding Statement in Relation to the Research Questions

### 6.5.1 Secondary Research Question 4

*To what extent are students' and employers' conceptualisations of teamwork skills aligned?*

In order to answer this question it was first useful to consider what students nearing graduation actually understand employers are seeking from new business entrants. The findings reported here show that students have a relatively accurate view of many of the skills and personal attributes an employer would be expecting of new graduates entering professional employment. The following table (Table 25) displays the extent of alignment of students' and employers' perspectives of the most important generic skills expected in business graduates at entry-level employment.

**Table 25: Skills Expected in Business Graduates: Alignment of Students' and Employers' Perspective**

<i>Generic Skills</i>		
Students' Perception	Order	Employers' Perception
<ul style="list-style-type: none"> <li>• Teamwork</li> <li>• Communication</li> </ul>	1	<ul style="list-style-type: none"> <li>• Teamwork</li> </ul>
<ul style="list-style-type: none"> <li>• Interpersonal</li> </ul>	2	<ul style="list-style-type: none"> <li>• Communication</li> </ul>
<ul style="list-style-type: none"> <li>• Leadership</li> <li>• Time-management</li> <li>• Creative/Innovative</li> <li>• Cultural Awareness</li> </ul>	3	<ul style="list-style-type: none"> <li>• Business/Commercial Awareness</li> <li>• Interpersonal</li> </ul>
<ul style="list-style-type: none"> <li>• Problem-solving</li> <li>• Organising</li> <li>• Computer Literacy</li> <li>• Decision-making</li> </ul>	4	<ul style="list-style-type: none"> <li>• Problem-solving</li> <li>• Analytical</li> <li>• Creative/Innovative</li> <li>• Negotiation</li> </ul>
<ul style="list-style-type: none"> <li>• Analytical</li> </ul>	5	<ul style="list-style-type: none"> <li>• Self-management/understanding</li> <li>• Time and Stress Management</li> <li>• Risk Management</li> <li>• Cultural Awareness</li> </ul>

Note: Rating, 1 = Most Important

When the results from students and employers were compared, it was identified that both cohorts agreed that teamwork is the *most* important skill expected of graduates. Furthermore, it appeared that what employers and students nominated as important selection criteria in terms of generic skills for entry-level graduates were also reasonably well aligned. There were differences for skills such as business/commercial awareness, negotiation, self-management/understanding and risk management skills which were considered very highly by employers but not mentioned by the students. Thus, it would seem that employers are expecting graduates to be far more ‘business wise’ than is actually the case, resulting in some noticeable gaps between students’ perceptions and employers’ expectations. Of interest is the perception by students that cultural awareness is a skill necessary for their future careers though less importance was given to this by employers.

In terms of personality-character traits, the findings reported here show that students believed that employers would most likely seek individuals who are motivated, flexible, friendly and honest with a strong work ethic. The following table overpage (Table 26) depicts the extent of alignment of students’ and employers’ perspectives of the most important personal attributes expected in business graduates at entry-level employment.

**Table 26: Attributes Expected in Business Graduates: Alignment of Students' and Employers' Perspective**

<i>Personal Attributes</i>		
Students' Perception	Order	Employers' Perception
<ul style="list-style-type: none"> <li>Motivation/Initiative</li> </ul>	1	<ul style="list-style-type: none"> <li>Professionalism/Business Etiquette (includes well-mannered/ polite /respects others)</li> <li>Willingness to Learn</li> <li>Flexible/Adaptable</li> </ul>
<ul style="list-style-type: none"> <li>Flexible/Adaptable</li> </ul>	2	<ul style="list-style-type: none"> <li>Positive Attitude</li> <li>Motivated/Initiative</li> <li>Strong Work Ethic</li> </ul>
<ul style="list-style-type: none"> <li>Strong Work Ethic</li> <li>Honesty/Integrity</li> <li>Friendly/Open-minded</li> </ul>	3	<ul style="list-style-type: none"> <li>Honesty/Integrity</li> <li>Commitment</li> </ul>
<ul style="list-style-type: none"> <li>Detail-oriented</li> <li>Reliable/Dependable</li> <li>Well-mannered/polite /respects others</li> </ul>	4	<ul style="list-style-type: none"> <li>Detail-oriented</li> </ul>
<ul style="list-style-type: none"> <li>Civic Involvement</li> </ul>	5	<ul style="list-style-type: none"> <li>Solicits/Receives Feedback</li> <li>Leadership tendencies</li> </ul>

Note: Rating, 1 = Most Important

When the results from students and employers were compared, it was identified that the personal attributes valued by students were reasonably well aligned with those that employers would look for and value when employing business graduates. Noticeable differences were with respect to professionalism/business etiquette, willingness to learn, a positive attitude, commitment and giving/receiving feedback which were attributes not mentioned by students.

In response to the question, it was helpful to consider the extent to which both cohorts shared the same view about what a team actually is—it makes intuitive sense that if both parties had opposing views about what a team is, then conceptualisations of teamwork competencies also would be vastly different. The findings reported within this research indicate that both students and employers held very similar ideas about what is an effective team. Though it is obvious that student teams and work teams are formed for a number of different reasons, participants believed that their goals are the same; namely,

to achieve maximum teamwork performance and experience success. For this to happen, both students and employers agreed that all team members must be committed to working individually in their own unique role and collectively to achieve a common target. A major characteristic of effective teams was that of clear expectations about the roles and responsibilities played by each team member. Other elements that characterised an effective team included strong team leadership, open communication, collaborative problem-solving, a climate of trust and competent individuals who can contribute to the team in terms of intellect, skills and personal attributes. Of the latter, the findings within this research identified teamwork skills to be a compendium of several generic skills inextricably entwined with a number of personal or attitudinal attributes. The following table (Table 27) displays the extent of alignment of the individually-held teamwork skill set needed for effective teamworking from the students' and employers' perspective.

**Table 27: Individually-held Teamwork Skill Set: Alignment of Students' and Employers' Perspectives**

<i>Individually-held Teamwork Skill Set</i>	
Students' Perception	Employers' Perception
Generic Skill	
Communication	Communication
Conflict Resolution	Conflict Resolution
Cultural Awareness/Intelligence	Cultural Awareness/Intelligence
Decision-making	Decision-making
Interpersonal	Interpersonal
Intrapersonal	
Leadership	Leadership
Negotiation	Negotiation
Organising	Planning & organising
Project Management	
Problem-solving	Problem-solving
Research	

Note: Listed in Alphabetical Order

In answer to Research Question 4, when the results from students and employers were compared, it was identified that the generic skills constituting the teamwork skill set were *closely aligned*. There was a slight difference in terms of the categorisation of organising and project management as two separate skills by students, whereas employers had grouped these skills under the one category of planning and organising. A noticeable difference was with respect to intrapersonal and research skills which were considered important for successful teamwork by students but not mentioned by the employers.

Of interest to the author was the difference between the generic skills comprising the teamwork skill set (Table 24, p. 193) and the list of generic skills expected in business graduates at entry into professional employment from both cohorts' views (Table 25, p. 199). That is, seven of the 10 subskills within the teamwork skill set matched those which students believed employers would expect in new business entrants. In contrast, five of the 10 teamwork subskills matched those that employers themselves would expect in business graduates. So, it would seem that disparity exists within each cohort rather than simply between individuals. One possible explanation for this is that although employers identified decision-making and leadership as core subskills of teamwork, earlier findings within the present research indicated that they would not expect new graduates to make team-level decisions or to be team leaders; thus, they would not expect well-developed leadership and decision-making skills in new entrants.

### **6.5.2 Secondary Research Question 5**

*To what extent do employers' perceive a difference between graduates' teamwork skills expected before employment and demonstrated once employed?*

The findings of the present study indicated that there *is* a disparity between expectations and performance of graduates' teamwork competencies. The critical gaps found were in relation to graduates' communication skills, interpersonal skills and attitudinal attributes. Findings within this research identified communication to be the *most* important skill needed for effective teamworking, thus, it would be expected that deficiencies in

communication skills would be hugely problematic to overall team effectiveness. Similarly, because teamwork requires cooperative interaction among its members and interpersonal skills are fundamental to one's ability to interact with others, it would be expected that where deficiencies exist (e.g., intolerance, hostility, arrogance), collective efficacy and concerted efforts for task accomplishment (e.g., effective information sharing) would be negated and, in turn, team performance and effectiveness adversely affected. These findings are critical because degraded team performance induced by reductions in collective efficacy is closely tied to psychological strain (e.g., stress) which, ultimately, bears down on job satisfaction.

## **6.6 Final Synthesis of the Research Findings: A Dynamic Model of Teamflow**

As a result of the synthesis of findings from Strands One and Two of the current research study, presented here is a new research outcomes model (R.O.M.) for optimising teamwork and performance outcomes within the HE context. This illustrative model as shown in Figure 24 is called 'A Dynamic Model of Teamflow' (DMTf), reflecting the integration of a number of relevant internal and external elements necessary for improving collaboration—a kind of collaboration where individuals and their team generate synergy and achieve outstanding results within an optimising environment.

A key point of difference between the DMTf model (Figure 24, p. 207), the hypothetical model (Figure 13, p. 77) and existing team models in the literature is 'flow', a term coined by Csikszentmihalyi (1990) to describe a state of consciousness that integrates deep engagement in an activity, intrinsic motivation, loss of awareness of self and time, and a vibrant sense of mastery and coordination. Also, flow theory suggests that people who are 'in the flow' (also referred to as being 'in the zone') sense a balance between the challenges of the task or activity and the skills they bring to it—they feel challenged or tested but not overwhelmed. Applying flow theory to teamwork, then, is the idea that educators can intentionally design learning environments that help to engage individuals and their teams and support such positive and powerful mental states of thinking and

behaving. The DMTf model (Figure 24) aims to present and share the main aspects of this team flow concept, in order to obtain relevant notions of how to apply this concept to student teams within HE and, thus, assist team effectiveness development.

The literature on flow theory identifies four key conditions required in a flow-facilitating environment: first, concrete goals and manageable rules; second, clear feedback on how well the work is progressing; third, balance of challenge and skill (or opportunities to adjust to task); and fourth, complete concentration on the task. These conditions also characterise the environment in which student teams operate, as confirmed by the findings of Strands One and Two of the current research study. For example, the variable ‘clear goals and standards’, where goals were perceived as achievable and expectations were specific, was found to be a significant predictor of students’ satisfaction with their team experience and their perceived development of teamworking ability. Indeed, the goals and purpose of a team are critical as they set the stage for the other supporting core elements, leading to the successful achievement of individual and team outcomes, as earlier discussed.

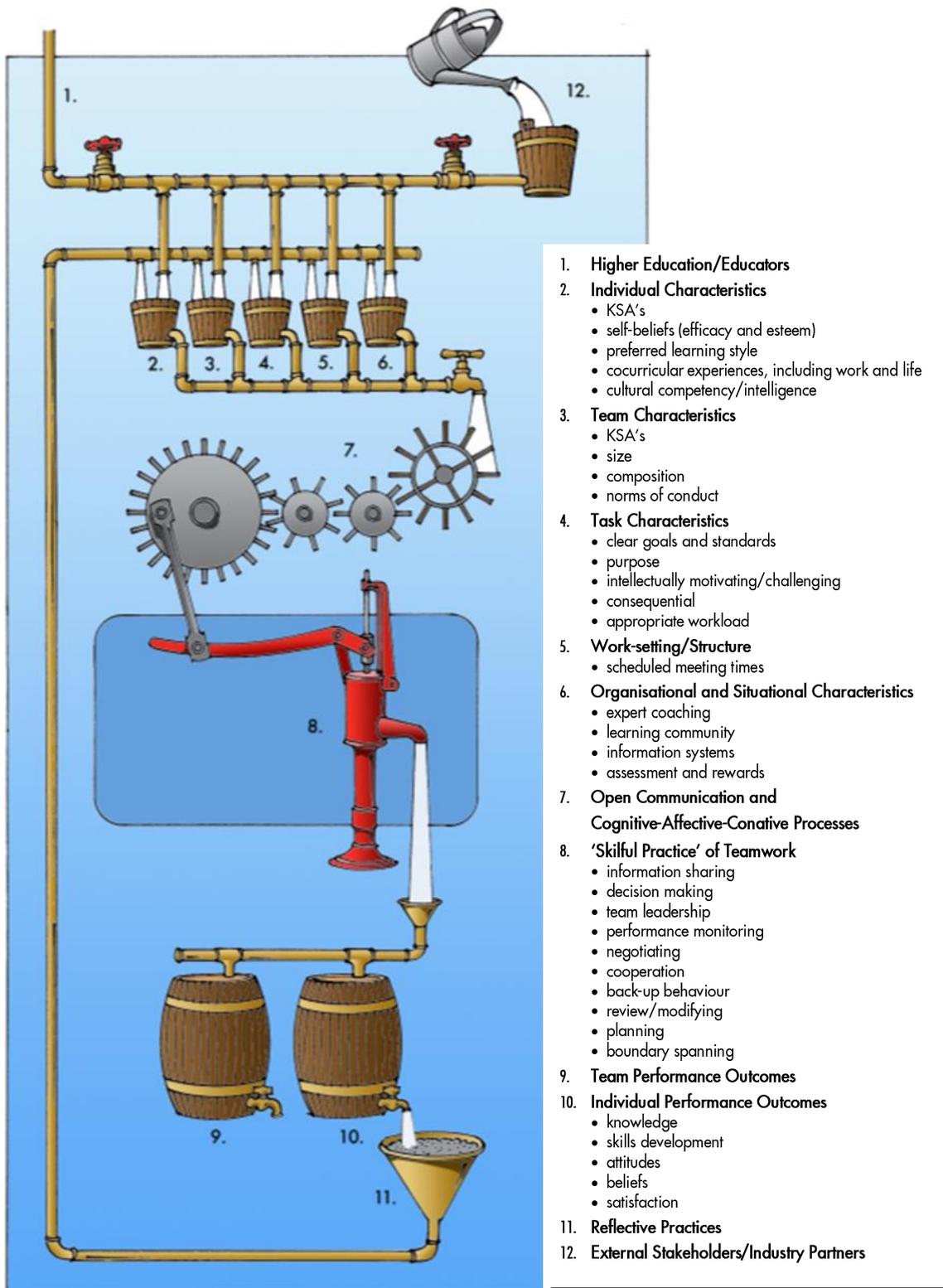
The DMTf model (Figure 24) draws on the underpinnings of flow theory in terms of the conditions that predict flow, but expands these conceptions to encompass the pervasiveness of *open communication* and *cognitive-affective-conative processes*. Specifically, in order for intense involvement, overall enjoyment and control (key characteristics of flow experiences) to arise a certain level of communication, commitment, trust and cohesion must exist among team members. In this respect, open communication and cognitive-affective-conative processes such as the aforementioned may be considered as the ‘engine’ of Figure 24 as the meshing of gears endeavour to support the well-being and growth of the team. It must be noted though, that while the affect of open communication and cognitive-affective-conative processes to overall team effectiveness was not empirically explored in the current research study, the findings that emerged from analyses of students’ open-ended comments (Strand One) and in-depth interviews (Strand Two) provide some support for their inclusion in a model (Figure 24) for implementing the concept of team flow in the HE context. As a result of

the synthesis of research findings from Strands One and Two, the author proposes four other relational constructs to facilitating Teamflow that are also key points of difference between the DMTf model (Figure 24), the hypothetical model (Figure 13) and existing team models in the literature:

- cocurricular experiences *and* cultural competency/intelligence as variables in the overarching category of individual characteristics;
- information sharing, negotiating, review/modifying and planning as processes comprising teamwork; and
- external stakeholders/industry partners (e.g., employers, professional bodies).

Each of the above key constructs are addressed in more depth in the following paragraphs with reference to the DMTF model, as illustrated in Figure 24.

**Figure 24: A Dynamic Model of Teamflow, with the pervasiveness of cognitive-affective-conative processes highlighted**



- *Cocurricular experiences, including work and life*

As this research study has illustrated, aspects of one's work and life naturally contribute (either positively or negatively) to learning and skills development. This is an important consideration with respect to facilitating teamwork and flow in HE because while most would agree that meaningful learning also occurs outside the confines of a classroom (Bennett et al., 2000; Blasko, 2002; Feast, 2001), the particular 'functional perspective' (Bunderson & Sutcliff, 2002) that is acquired through work, for example, may actually influence one's level of engagement in teamwork. In other words, the dominant functional background of individuals within a team may have contrasting effects on how members communicate, coordinate their work and perform despite the establishment of shared team goals and core norms of conduct.

In terms of students who are involved cocurricularly in campus activities and social organisations, intramural sports, leadership programmes and so forth, studies have found that "involvement in student organisations appears to have positive effects on the student's *total* [emphasis added] academic experience" (Cooper, Healy & Simpson, 1994, p. 101) and that students who are engaged in campus life tend to have more positive views of community involvement than those students who are not actively engaged (Eklund-Leen & Young, 1997). With respect to the latter finding, it is logical that a focus toward community can lead to an understanding of and an orientation toward interdependence, which is a key underpinning of successful teamwork.

While the present research study did not set out to examine or explore the impact of cocurricular experiences on teamwork, information brought to bear as a result of the synthesis of findings from Strands One and Two lend support to the inclusion of this important construct in Figure 24; this is a valuable contribution to the wider body of knowledge as the construct of 'cocurricular experiences' is not acknowledged in any existing team models. Notably, the author recognises that although more questions need to be answered before recommendations for practice are clear with respect to the impact of cocurricular experiences on Teamflow, it is suggested that, to the extent that educators largely have control over the composition of student teams, they seek to create

teams such that there is a balanced representation of individuals who are involved in student organisations and working while enrolled in tertiary studies.

- *Cultural competency/intelligence*

Ng and Earley (2006) defined cultural intelligence (CQ) as an individual's capability to be effective across, and within, a wide range of cultures and suggested that a person with a high level of CQ is likely to adapt faster and operate effectively regardless of the cultural context. Cultural intelligence also includes the recognition that in some situations the best option is to not adapt at all, thereby averting the risk of presenting oneself and being perceived by others as offensive, incompetent, maladjusted or socially inept (Earley & Ang, 2003; Thomas, 2006). Further, researchers have contended that, like other forms of intelligences, CQ exists on a continuum that develops over time (Earley & Mosakowski, 2000; Ng & Earley, 2006). This implies that any individual who is reasonably alert and motivated can learn to become culturally intelligent.

Recognition of the need to incorporate 'cultural competency/intelligence' in the DMTf model (Figure 24) as a key variable (in the overarching category of individual characteristics) influencing and supporting teamwork arose from the research findings from Strands One and Two. For example, in this research, students not only recognised the importance of raising their cultural awareness in order to generate team synergy more effectively, but also many stated their preference to working in culturally diverse teams because that is what work teams will be "like in the real world". The implications arising from these findings was that student satisfaction with working in culturally diverse teams was greater rather than less and that many believed that their final team performance outcome improved as a result of cultural diversity. In addition, students appeared to have some level of understanding of the organisational context in which they will operate once professionally employed. Since HE want students to acquire the set of teamwork skills and associated behaviours that will enhance their employability, it becomes ever critical to provide them with opportunities and strategies where they can learn how to become culturally competent in order to work as effective team members in culturally diverse teams. Notably, the author recognises that care must be taken in

helping to create a climate where cultural diversity is understood, promoted and valued for as previously highlighted, it is not uncommon for misunderstandings and tensions to arise due to cultural barriers. The significance of incorporating ‘cultural competency/intelligence’ in the DMTf model (Figure 24) is therefore reinforced when considering the current research findings and the call for ‘cultural acclimatisation’ facing HE learning and teaching. Thus, the author recommends that explicit teaching about essential cross-cultural competencies should be focused at the *outset* of team formation so as to create an environment where all students are included and able to perform to their potential. It bears noting that a myriad of cross-cultural competencies have been proposed in management literature; however, those considered of most importance to culturally diverse teams such as dissimilarity openness and emotion management skills have been discussed by Lloyd and Härtel (2003).

- *Information sharing, negotiating, review/modifying, and planning as processes comprising the ‘skilful practice’ of teamwork*

Recognition of ‘information sharing’, ‘negotiating’, ‘review/modifying’ and ‘planning’ as team action processes to include in the DMTf model (Figure 24) arose from the research findings from both strands of the current study. For example, information sharing was found to be a central process through which team members collectively utilised and expanded the pool of available information and knowledge, thereby increasing their team task functioning and, in turn, goal attainment. Additionally, a synthesis of the findings indicated that overtly sharing information with teammates further promoted a cooperative team climate, leading to overall team effectiveness. Therefore, ‘information sharing’ is included in the DMTf model (Figure 24) as a key process in the ‘skilful practice’ of teamwork. Further, the author suggests that to help develop positive information sharing behaviours among student team members, educators should consider conducting in-class team-building activities *throughout* the semester or for the duration of the project. Also, to facilitate timely response activities in terms of student teams deciding how to plan, integrate and act on resources required for goal accomplishment, there needs to be free flow of information between educators and students as related to the tasks, goals and standards, progress and the like.

- *External stakeholders/industry partners*

In order to provide assurance of learning for enhanced graduate employability, a necessary first step is to determine the competencies and standards required at entry into professional employment. The importance of competency profiling is aptly highlighted by the Council for Industry and Higher Education (CIHE, 2008): “it is thus important for business sectors to be more clear, consistent and effective in signalling their requirements to students and universities” (p. 5). A strong indication of what business and industry expects from HE can be drawn from an analysis of criteria that employers use when recruiting graduates. The findings of this study has shown that employers regard teamwork skills, including the ability to participate effectively in diverse teams, as the most critical competency required in business graduates. Also of importance to the identified required teamwork skill set are the personality traits and values which are seen as signs of maturity and professionalism and which employers also expect to see demonstrated by graduates. That said, as the global economy continues to grow and evolve, it is the author’s point of view that HE will need to continuously ascertain and articulate employer opinion on what makes a graduate employable to ensure that undergraduate programmes are appropriately aligned. This can help minimise or remove the skills gap between student perceptions and employer expectations; however, this information sharing must extend beyond a ‘tick list’ of competencies if students are to see their relevance to their intended profession.

In the context of the DMTf model (Figure 24), external stakeholders/industry partners is depicted as having the potential to contribute to the preparation of students for teamwork success beyond graduation, with interaction limited of course by educators who seek to appropriately tie their curricula to industry needs. Specifically, the prospective collaborative partnership between HE and external constituents is represented as a main valve in the DMTf model (Figure 24) to show that it is possible to adjust the flow of incoming information via the opening or closing of this valve. As the author earlier noted, if “employers talk the language of high-profit, high-skills enterprises but run low-skills, low-profit ones, then we [educators] should be careful with employer views of what the economy needs” (Knight & Yorke, 2004, p. 23). From the findings in this

research it is suggested that close relations between university leaders and educators and the business community are essential to defining a perception of future practice, aiding continuous curriculum development and ensuring student success in labour markets. The author also proposes that ongoing two-way dialogue with the business community may be achieved through research partnerships, advisory boards, corporate relations with the campus career centre, student projects in industry, student business-simulation projects (i.e., CapSim®) and alumni associations.

## **6.7 Chapter Summary**

In Chapter 6 the objectives of Strand Two of the research study in relation to the qualitative findings and the literature reviewed in Chapter 2 were presented and discussed. The actual words used by the research participants to describe their experiences added to the richness of the discussion. In addition, the two secondary research questions developed for Strand Two of the research were answered. Following that, a final synthesis of the research findings from Strands One and Two of the study was made and a new research outcomes model was presented and discussed. The illustrative model, titled 'A Dynamic Model of Teamflow' (DMTf), articulates a range of interrelationships and opportunities and actions that are possible for optimising students' teamwork and performance outcomes within the HE setting. Key points of difference between the DMTf model (Figure 24, p. 207), the hypothetical model and previous team models in available literature were defined. Chapter 7 that follows is the concluding chapter for the current research study.

## **CHAPTER 7**

### **CONCLUSION**

#### **7.0 Introduction**

Having collected survey data in order to examine specific relationships among concepts comprising the hypothetical model developed in Chapter 3, Chapter 5 showed the results of the statistical analyses of the data and findings were discussed in relation to the literature review (Chapter 2), the research questions developed for Strand One of the investigation and the hypothetical model (Chapter 3). Thereafter, an interim research outcomes model (I.R.O.M.) was devised and presented against the hypothetical model as an explanation of the latest research findings in the discipline as found in the current research. Recommendations for improving educational practice were made throughout the discussion. In Chapter 6, the qualitative findings as a result of interviews held with employers and business students in their final unit of study were discussed in relation to the literature review (Chapter 2), the research questions developed for Strand Two of the investigation and the I.R.O.M of Chapter 5. Chapter 6 concluded with a final synthesis of the research findings from Strands One and Two of the study and the subsequent presentation and discussion of a new research outcomes model (R.O.M.). Key points of difference between the illustrative R.O.M., the hypothetical model and existing team models in extant literature were defined.

In this final chapter, Chapter 7, a review of the research and description of how the research purpose has been fulfilled is presented. The overarching question that guided the research study is answered. Limitations and contributions of the research, as well as suggestions for further research are included. Lastly, a final summary is made of the chapter. This multistrand MM research study is believed to make a modest, but unique contribution to advance the growing body of team literature.

## 7.1 Review of Research

The author was intrigued and inspired to complete this research after reading literature which contended that demonstrable teamwork skills is critical not only to business graduates about to assume employment, but also to those individuals who are currently in the workforce (Barrie, 2004; Hager et al., 2002). Yet, despite the fact that many educators have worked diligently to integrate collaborative learning activities across the curricula to promote students' skills development and active engagement in the learning process, criticisms continue to be leveled at business schools and the quality of their graduates. Specifically, widely-held perceptions persist throughout available literature that describe business graduates as lacking the teamwork skills needed to meet the demands of 'real' workplace environments. Many research studies have also indicated that academic staff often have little understanding of how effectively to design and support active learning pedagogy so that its full potential is realised (Lizzio & Wilson, 2005). The lack of knowledge or nebulousness of how to best teach teamwork skills that will best prepare graduates for success in the corporate world may be due partially to the lack of shared meaning or perspective as to what these teamwork skills are and an appropriate standard of skills performance; particularly for teamwork skills as needed in the context of HE than those employers expect graduates to demonstrate. These issues brought the author to question whether or not student team-based projects in HE are an effective means for developing the skills needed for teamworking required in professional employment upon graduation. In other words, to what extent do these projects serve as a bridge between the worlds of academia and corporate? Underlying the dilemma, and another reason for academic research attention as addressed in the current thesis, is the recognition that "research has often focused on how teams can be managed without really describing what teamwork really is" (Lembke & Wilson, 1998, p. 928) or, focus on one construct (e.g., team performance) to the exclusion of others. Further, the research topic was seen as an important area of inquiry because of the recognition in extant literature that students' perceptions of their team experiences in HE have not been adequately studied (Athiyaman, 2001; Gottschall & Garcia-Bayonas, 2008; Hartley, 2005). The author's intent in conducting this multistrand MM study was

to theoretically and practically contribute to, and advance, the growing body of team literature.

## **7.2 Research Study Purpose Revisited**

Consequently, using a sequential mixed methods design (Teddlie & Tashakkori, 2003), characterised by two strands of research, the purpose of the current investigation was twofold. Firstly, in Strand One of the study, focus was given to examining students' perceptions of the learning environment in order to determine specific variables influencing their teamworking ability development and overall satisfaction with the team experience. It was felt that by determining what students perceived to be important for their team experience to be successful, insights drawn would aid faculty understanding of, and capacity to structure, students teams so that the potential of students is supported and their needs met.

Secondly, in Strand Two, focus was given to exploring students' and employers' conceptualisation of teamwork in an effort to help close the existing gap between perceptions and expectations as related to teamwork skills required of business graduates entering career-ladder employment.

The purpose of the research in Strand One was fulfilled utilising multiple regression analyses to test six pairs of hypotheses on student teamwork ability and satisfaction (see pp. 130-134). In order to give a clear overview of the outcomes of the hypotheses testing, the summaries are presented in Tables 28 and 29, respectively.

**Table 28: Summary of Hypotheses Testing: Ability**

<i>Secondary Research Question</i>		
Hypotheses		Findings
H <sub>1A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of belonging to a learning community.	Supported
H <sub>2A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of the intellectual motivation/challenge of the team task.	Supported
H <sub>3A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of appropriate assessment.	Rejected
H <sub>4A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of appropriate workload.	Supported
H <sub>5A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of good teaching.	Rejected
H <sub>6A</sub> :	Student teamworking ability development will be significantly influenced by his/her perception of clarity of goals and standard of work expected.	Rejected

As shown, the hypotheses that a sense of ‘Learning Community’, ‘Intellectual Motivation’ and ‘Appropriate Workload’ is associated with students’ perceived development of their teamworking ability is supported; though, ‘Appropriate Workload’ was found to have an inverse and relatively small effect on the criterion variable. From these findings it seems clear that, for team projects to be an effective teaching instrument in the HE setting, educators need to ensure sufficient task complexity and quality of relatedness beyond the classroom. The team project should be an opportunity for students to hone their collaborative learning skills and apply principles and knowledge gained in the course to the analysis of authentic real-world business situations, as opposed to a mere simplified assessment task. Also, it appears that forming a sense of community, where students feel confident and committed to explore ideas and academic topics with their counterparts and teaching staff, is a key to the development of their teamworking ability. This means that in designing learning environments that will foster higher levels of relationships and sense of community among course participants, teaching staff must intentionally create a climate that makes collaboration expected, inclusive and genuine. Inclusion is essential to ensure that the team project has all

members' voices represented at the table. A detailed discussion of the findings as summarised in Table 28, including theoretical and practical implications, is presented in Chapter 5.

**Table 29: Summary of Hypotheses Testing: Satisfaction**

<i>Secondary Research Question</i>		
Hypotheses		Findings
	2. What teacher-controlled variables of the learning environment positively influence students' overall satisfaction with their team experience?	
H <sub>1B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of belonging to a learning community.	Supported
H <sub>2B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of the intellectual motivation/challenge of the team task.	Supported
H <sub>3B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of appropriate assessment.	Rejected
H <sub>4B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of workload appropriateness.	Rejected
H <sub>5B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of good teaching.	Rejected
H <sub>6B</sub> :	Student overall satisfaction with the team experience will be significantly influenced by his/her perception of clarity of goals and standard of work expected.	Supported

As shown, the hypotheses that a sense of learning community, intellectual motivation and clear goals and standards is associated with students' perceived overall satisfaction with their team experience is supported. This pattern of findings empirically confirm that students enjoy greater levels of satisfaction with their team experience when they are clear about what is expected of them and it is considered to be useful and highly relevant to future professional practice. The challenge facing academic staff, then, is one of encouraging iteration between theory and practice as a pathway to increasing students' satisfaction with their learning experience and developing competencies within a social context which are clearly desirable and will better serve their needs throughout both private and professional contexts after graduation. This becomes especially relevant also when considering that, psychologists have found that student satisfaction helps to build

self-confidence which, in turn, helps students acquire new skills and knowledge and even greater levels of confidence, in what may be described as a virtuous cycle (Letcher & Neves, 2010). Therefore, as course designers and teaching staff, ensuring an effective team experience in a rich and carefully designed learning environment not only contributes greatly to students' sense of satisfaction but also to their sense of self-confidence. It makes intuitive sense that students who are generally satisfied with their team experience also feel a strong sense of self-confidence about skills, knowledge and ability, as was revealed in the findings of the present study. A detailed discussion of the findings as summarised in Table 29, including theoretical and practical implications, is presented in Chapter 5.

The purpose of the research in Strand Two was fulfilled utilising content analysis on text data generated from semistructured interviews held with student and employer participants in relation to the topics under study. A summary of the central findings according to each participating group is presented in Tables 30 and 31, respectively.

**Table 30: Student Interviews (Central Findings)**

<i>Skills Required of Business Graduates</i>
Teamwork and communication were cited as the two most important skills required for successful entry into professional employment.
<i>Personal Attributes Required of Business Graduates</i>
Motivation/initiative and flexibility/adaptability were rated as the most important personal-related attributes or criteria required at entry into professional employment.
<i>Enhancing Employability Potential</i>
Students appeared to undervalue the importance of their involvement in cocurricular experiences such as community activities, student associations, sport teams, volunteer work and so forth when applying for jobs or responding to interview questions.
<i>Elements of an Effective Team and its Members</i>
Students' concept of what constitutes a team is consistent with extant team literature; cooperative interaction, cohesion and commitment to shared goals were consistently emphasised.
The predominant and consistent behaviours that help make a team successful are open communication and information sharing.
Students distinguished 12 core teamwork competencies and 12 personal or attitudinal attributes that an individual must possess to support team member interaction and teamwork processes leading to overall team effectiveness (see Table 22, p. 175).

As shown in Table 30, students appear to have a high level of awareness of their professional needs and that they require a suite of skills and personal attributes for a successful pathway to their chosen career. Importantly, students distinguished teamwork skills as a critical competency expected of them, which aligns with employers' expectations, as summarised in Table 31 below. That said, there appears to be a clear indication that employers want HEIs to focus more attention to developing students' communication skills.

**Table 31: Employer Interviews (Central Findings)**

<i>Skills Required of Business Graduates</i>
Employers identified teamwork skills, including the ability to participate effectively in diverse teams, as a critical competency required of new business entrants.
<i>Personal Attributes Required of Business Graduates</i>
Of equal importance to teamwork skills are personality traits and values which were seen as a sign of maturity and commitment to professionalism and which employers expect graduates to demonstrate. Professionalism/business etiquette and willingness to learn were identified as two important personal attributes of business entrants to the workforce.
<i>Enhancing Employability Potential/Perceived Teamwork Deficiencies</i>
Employers believe that the communication and interpersonal skills of new business entrants to the workforce are deficient. There was an identified need for much stronger written and verbal communication skills, especially a better command of the English language in terms of basic spelling, grammar and vocabulary as such deficiencies can reflect negatively on team reports and briefs distributed to clients and other external stakeholders. Employers have serious concerns in relation to graduates' attitudinal attributes, especially as related to arrogance and other nonsupportive behaviours that negate team performance and, in turn, team effectiveness.
<i>Elements of an Effective Team and its Members</i>
Employers' concept of what constitutes a team is consistent with student participants and extant team literature. Effective work teams are characterised by clear goals and a shared approach, a unified commitment, strong team leadership, collaborative problem-solving and competent team members who can contribute to the team in terms of intellect, skills, and personal attributes, and who are clear about what is expected of them individually and collectively. Employers indicated that successful work teams have a climate of trust that is created and promoted by open communication, honesty, accountability, and supportive and respectful behaviour. Because individuals are expected to 'team-hop', they must be able to draw from their teamwork competency profile and utilise particular skills to suit their respective team member roles and associated responsibilities. Employers distinguished 9 core teamwork competencies and 13 personal or attitudinal attributes that an individual must possess to support team member interaction and teamwork processes leading to overall team effectiveness (see Table 24, p. 193).

Having provided a summary of the central findings from Strand Two of the current research, the answer to the overarching question that guided the study is presented in the next section.

### 7.3 Overarching Research Question

To answer the overarching question for current research study ‘What ‘requisite mix’ of teamwork skills are expected of a business graduate entering career-ladder employment’? the research findings are summarised below.

The current study findings indicated that employers across various business sectors seek similar skills in new business entrants. This is both important and informative because teamwork skills are actually a compendium of several key generic skills that appear to be intertwined with a number of personal attributes. In terms of individually-held teamwork skills needed to promote team member interaction and teamwork processes leading to team effectiveness, participants indicated that graduates should possess the following ‘requisite mix’ of skills (listed alphabetically):

- Communication
- Conflict resolution
- Cultural awareness/intelligence
- Decision-making
- Interpersonal
- Leadership
- Negotiation
- Planning and organising
- Problem-solving

However, while employers identified decision-making and leadership skills as part of the teamwork skill set required of graduates, they felt these skills most likely would be developed through industry experience/maturity. This does not mean that employers expect graduates to be indecisive, rather that they felt new entrants would not be placed in the position of making team-level final decisions. With respect to leadership skills, participants indicated they look more for evidence of leadership *qualities* or *tendencies*. Facets of the skills (as above) identified as important are detailed in Table 24 (p. 193). In terms of communication skills, for example, graduates are expected to:

- speak and write clearly and concisely in both formal and informal situations,
- listen attentively to team members' ideas and opinions respectfully,
- use a high standard of English language (i.e., spelling, grammar, and vocabulary) so as to be perceived as competent individuals in the professional world,
- converse in a positive and effective way with colleagues at all levels of management within the organisation, as well as to external stakeholders,
- share information,
- speak to the needs/level of the audience.

In relation to the personal attributes that employers value in new business graduates with respect to effective teamworking, participants consistently indicated that graduates are expected to be well-mannered, polite and respectful of others. Also, they are to act responsibly and cooperatively, fulfilling his or her team role responsibilities and extending supportive behaviours to fellow team members including the soliciting/receiving of feedback. Other requisites expected in new entrants for successful team functioning include a positive attitude, willingness to learn, motivation/initiative, conscientiousness or detail-oriented, flexibility/adaptability and honesty/integrity.

It must be noted that the findings within the present study indicated a disparity between expectations and performance of graduates' teamwork competencies once employed. The critical gaps or deficiencies identified by employers were with respect to graduates' communication skills, interpersonal skills and attitudinal attributes.

Having answered the overarching research question that guided the present study, following is a delineation of the limitations and contributions of the research, as well as suggestions for future research.

#### **7.4 Limitations, Contributions and Suggestions for Future Research**

The findings and conclusions drawn from the results of the present study should be interpreted with the following five limitations in mind. Firstly, although student

participants nearing graduation were selected purposively because of their experience with working in teams over a three-year degree, the data used captured students' perceptions at only one point in time. Specifically, there was no benchmarking of students' attainment of teamwork skills or their awareness of what KSAs even comprise teamwork at entry into the Capstone unit. Hence, some students may not have articulated or answered particular interview questions to the best of their ability or understanding—after all, 'people don't know what they don't know'. Therefore, conducting pre- and post-teamwork assessment of students' perceptions or attitudes might be useful. Also, it is important to remember that interviews can only obtain individuals' reconstruction of an event or experience but not how they may actually do it (Liamputtong, 2009). As such, in order to gain an understanding of why people do what they do within a particular setting or to determine how the event occurs, other data collection techniques such as participant-observation may be needed.

A third limitation of the present study lies in its selective examination of variables of the learning environment as shown in the hypothetical model (Figure 13). There are other input variables that may influence students' perception of their teamwork ability and overall satisfaction with their team experience, but these were unable to be empirically tested due to pragmatic constraints. Therefore, a subsequent study with the inclusion of other input variables may yield additional insights into student ability and satisfaction. Fourthly, although the tasks tackled by the student teams in the present study were designed to be commensurate to the tasks of professional teams, the sample of students in an educational context may not be fully representative of professional work teams. To deal with this concern, further studies in various contexts could strengthen the validity of findings. The last restriction of the present study is that relationship between cognitive-affective states and team action processes, leading to team effectiveness was not overtly explored but rather, the author proposed the inclusion of these states or constructs in the hypothetical model (Figure 13, p. 77) as it was reasonable to concede that team climate and feelings of safety and trust, for example, facilitate the transformation of input variables to performance outcomes. Notably, these constructs had been missing in models of teamwork and team effectiveness in extant literature. A synthesis of the

findings from both strands of the present research provided some support for the inclusion of cognitive-affective-conative processes as a mediating mechanism on the transformation of input variables to performance outcomes via team processes. In this regard, the distinctiveness of the present study is due partially to the development of a wholly integrated team model as illustrated in Figure 24 (p. 207) that may be used as the starting point for future research. It is suggested that a more comprehensive understanding of the cognitive-affective-conative constructs may result from future researchers' attempts to explore (both theoretically and empirically) how said constructs influence teamwork and flow.

Despite such shortcomings, the contributions of the current study more than compensated the constraints. These strong points are listed.

1. This study captured students' perceptions of their team experiences which prior research contends has not been adequately studied. This is significant in that the findings can provide curriculum developers and teaching staff with the knowledge needed to make judgements about the quality of teaching, learning design, delivery and its support which, in turn, can be used for producing change.
2. The quantitative methodology used in Strand One of the present research empirically confirm the existence of the considered constructs and relations among them. In addition, the qualitative data obtained by means of two open-ended questions delivered rich insight into students' perceptions as to how and why relationships develop in team contexts.
3. As part of the methodology in Strand One of the study, questionnaires were distributed to 400 business students in their final semester of study in a three-year degree programme. From this cohort, a total of 319 ( $n = 319$ ) valid responses were obtained, achieving a response rate of 80%. The large sample size and the nonresponse bias makes the findings statistically convincing and generalisable to a larger population.

4. A fourth contribution of this research is the finding that, both students and employers regard teamwork skills as the most important generic attribute required in new business entrants in professional work and practice. Also, both parties share similar views as to the characteristics of an effective team and its members.
5. The present study extended previous team research by determining the teamwork skills and facets thereof most valued by employers and expected of graduates upon graduation. It was found that teamwork skills are actually a compendium of several key generic skills underpinned by a number of key traits and dispositions, and that both parties' view of the generic skills constituting the teamwork skill set are closely aligned. Nevertheless, critical gaps between expectations and performance of teamwork competencies exist.
6. A further contribution as a result of the synthesis of findings from Strands One and Two of the study is the advancement of a new research outcome model. This illustrative model titled 'A Dynamic Model of Teamflow' (DMTf) provides new scope for studying the range of interrelationships and opportunities and actions that are possible for optimising students' teamwork and flow within the HE setting. Unlike the hypothetical model (Figure 13), the DMTf model (Figure 24) gives emphasis to the importance of: cocurricular experiences and cultural competency/intelligence as input variables; open communication and conative processes as mediating mechanisms; information sharing, negotiating, reviewing/modifying and planning as processes comprising the 'skilful practice' of teamwork; reflective practices as a critical link between thought and action; feedback loops such that outputs may be fed back into the system as input variables; and external stakeholders/industry partners as no team can operate independently within which it functions. Meaning, continuous input from business and industry is essential to defining the future practice of graduates and aligning business curricula to meet those needs.

## **7.5 Chapter Summary**

Briefly, Chapter 7 first captured an review of the research and how the research purpose has been fulfilled. Then the overarching question that guided the research study was answered. Chapter 7 was concluded with the limitations and contributions of the current research, suggestions for future research and the summary for the chapter.

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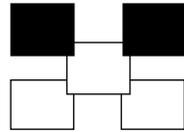
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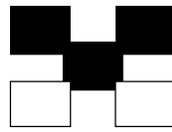
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## Appendix A: Patterns of Generic Skills Provision in Higher Education

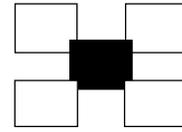
A typology of six patterns of generic skills provision:



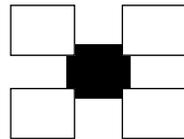
Pattern 1



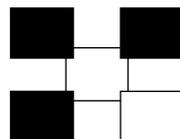
Pattern 2



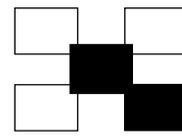
Pattern 3



Pattern 4



Pattern 5



Pattern 6

- Pattern 1 – skills provision is within the distinctive substantive and syntactic knowledge of the discipline, which are seen by the course providers as the core skills of the subject. Generic skills such as group work, reflection, communication, library use and so on may be used or encourage to enhance the academic study but are of an incidental nature.
- Pattern 2 – substantive and syntactic knowledge of the discipline is developed through the purposeful acquisition and use of specific generic skills. The latter are the means by which learning of the disciplinary knowledge is encouraged and enhanced. Disciplinary and generic skills are considered of equal importance.
- Pattern 3 – there is an emphasis, explicitly, for students to acquire generic skills embedded to a greater or lesser degree in the practice of the discipline. The latter is the vehicle for skills development. The outcome of the course is clearly to acquire generic skills, developing disciplinary knowledge is of minor significance.
- Pattern 4 – the focus is exclusively on generic skills, to the extent that the disciplinary knowledge and skills acquired or used could be of the students' choice or could be entirely unrelated to the disciplinary study.
- Pattern 5 – the focus is on substantive knowledge and its application, particularly in those subjects that are vocational. Insight into the workplace is through occasional contacts with employers, visits to the workplace or simulations. There is also some provision for generic skills.

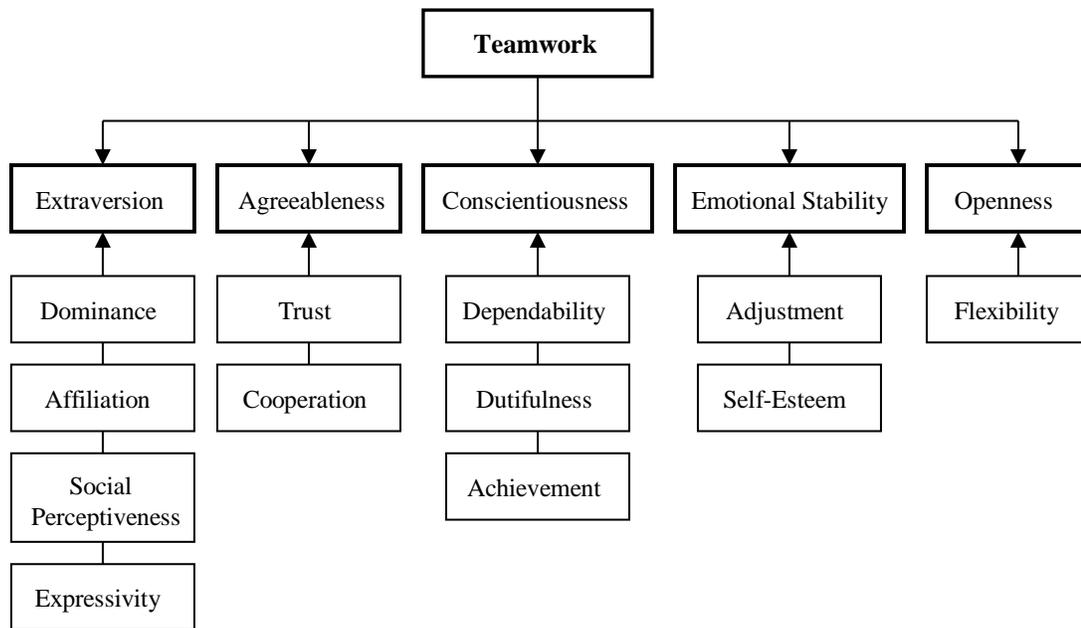
## **Appendix A: Continued**

- Pattern 6 – there is an emphasis on both generic skills and raising awareness about the requirements and constraints of the world of work. The context for skills utilization and development is ‘real’ work experience in a workplace setting. The focus on disciplinary knowledge and skills will vary depending on the purpose of the experience.

(Bennett et al., 2000, pp. 50-51).

## Appendix B – Hierarchical Model of Team Member Personality

A hierarchical model of team member personality, defined by the Big Five trait dimensions of emotional stability, extraversion, openness, agreeableness and conscientiousness. These traits are composed of the more specific facets that the authors believe are relevant to team effectiveness.



(Driskell et al., 2006, p. 251).

## **Appendix C: Participant Information Form and Consent for Questionnaire**

Students Enrolled in:

- *Final Semester of Business Capstone Unit*

Dear Student

This letter to you is to introduce myself and the research project that I am currently undertaking for my PhD.

### **Purpose of Research**

The purpose of the research is to explore students' perceptions of their Capstone learning experience. This study will investigate the variables of the learning environment that influence students' ability development and satisfaction. It is anticipated that your feedback will be used to inform curriculum design.

### **Participation and Consent**

Participation will involve a survey questionnaire that will take approximately 10 minutes to complete. You are not required to give any personal details and all information is confidential. Participation is entirely voluntary. You have the right to withdraw from the study at any time. If you complete the questionnaire then I will assume that you have agreed to allow me to use your data in this research.

### **Further Information**

If you would like further information about the study please feel free to contact me by <email address> or by <telephone number>. If confirmation of these details is needed, please feel free to contact my supervisor <supervisor's name and contact details>.

I wish to express my appreciation and gratitude for your assistance.

Sincerely,

<signed by the researcher>

## Appendix D: Example of Student Survey Questionnaire

### Student Perceptual Feedback Questionnaire

The purpose of this questionnaire is to collect your perceptions about your learning experience. Please answer the following questions on the basis of the Capstone unit. Your name is NOT required and all information is confidential. Please complete as accurately and honestly as possible.

#### INSTRUCTIONS

Please read each statement carefully and shade in the circle for your response.  
Please shade only ONE circle for each statement.

Example:



<i>Please indicate the extent of your agreement/disagreement with the following statements as descriptions of <b>the Capstone unit</b></i>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Disagree or Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
It was always easy to know the standard of work expected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to explore academic topics with staff and students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The unit helped me develop my problem solving skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This unit has stimulated my interest in the field of study	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff member motivated me to do my best work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The workload was too heavy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I usually had a clear idea of where I was going and what was expected of me in this unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff member put a lot of time commenting on my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found my studies in this unit intellectually motivating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To do well in this unit all you really needed was a good memory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a result of this unit, I feel confident about tackling unfamiliar problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff member seemed more interested in testing what I had memorised than what I had understood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt part of a group of students and staff committed to learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was hard to discover what was expected of me in this unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students' ideas and suggestions were used during the unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was generally given enough time to understand the things I had to learn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff member made a real effort to understand the difficulties I might be having with my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The assessment methods employed in this unit required a deeper understanding of the unit content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the unit motivating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff member normally gave me helpful feedback on how I was going	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I learned to explore ideas confidently with other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Too many questions asked were just about facts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff member worked hard to make this unit interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix D: Continued

<i>Please indicate the extent of your agreement/disagreement with the following statements as descriptions of <b>the Capstone unit</b></i>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Disagree or Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
There was a lot of pressure on me as a student in this unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The unit helped me to develop my ability to plan my own work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The volume of work in this unit was worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The unit materials assisted my learning (e.g., unit outline, assessment guides, manuals, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
From the beginning of the unit, the staff member made it clear what was expected of students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like I belonged to a community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The learning experience helped me to develop my ability to work as a team member	<input type="radio"/>				
Overall, I am satisfied with the quality of my learning experience	<input type="radio"/>				

### Open-ended Comments: Learning and Teaching

What were the **best aspects** of the learning experience (please write below)


What aspects of the learning experience **need improving** (please write below)


### Background Characteristics:

(a) Gender: Male  Female

(b) Is English your first language?: Yes  No

(c) Age: 16-19  20-24  25-29  30-39  40-49  50+

(d) In which School is your course enrolled:

Accounting  Business Law  Economics & Finance

Information Systems  Management  Marketing

Other (specify): \_\_\_\_\_

Thank you for your feedback.

## **Appendix E: Introductory Letter for Semi-structured Interview and Consent Form – Student Participants**

Students Enrolled in:

- *Final Semester of Business Capstone Unit*

I am currently undertaking this study as part of my PhD. The purpose of the study is to provide an analysis of how effective teamwork is conceptualised from the perspectives of graduating business students and employers as a basis to determine the core skills of teamwork that are expected of a business graduate at entry into professional employment. It is anticipated that findings will help establish closer alignment between business curriculum and employers' expectations, thereby ensuring the development of diversified graduates who are 'work ready' for the 'real' world.

I am writing to kindly request your participation in this study. Participation will involve a semistructured interview (approx.. 45-60 min) that will place at a time and date convenient to you. Participation is voluntary and all interview responses will be totally confidential and anonymity assured. Participants may also withdraw from the study at any time without penalty.

Your cooperation is most vital as the valuable information and experience you provide will contribute significantly towards understanding teamwork and improving skills development in undergraduate business curriculum. At the conclusion of the study, I would be delighted to provide you with a report summarizing the major findings and recommendations that have arisen from the study.

If you have any questions please feel free to contact me on <phone number> or if need confirmation of these details, please feel free to contact my supervisor <supervisor's name and contact details>.

I wish to express my appreciation and gratitude for your assistance. Please contact me via contact details below to arrange an appropriate time and venue for the interview.

Sincerely,

<signed by the researcher>

**Appendix E: Continued**

**Consent Form for Student Research**

I ..... agree to participate in the research project titled: *‘Lifting the Veil on Teamwork: Evidence from Students’ and Employers’ Perspectives’*, being conducted by <researcher’s name> as part of her research studies at <university’s name>.

I understand that the purpose of the study is to explore how teamwork is conceptualised from the perspectives of graduating business students and employers as a basis to determine what ‘required mix’ of teamwork skills are expected of a business graduate at entry into professional employment.

I understand that participation is voluntary and that I may withdraw from the study at any time without penalty. I have agreed that my responses during the interview will be audiotaped. I am satisfied that my responses will be confidential and anonymity assured and that tapes will be destroyed after the data has been analysed.

Signed by ..... /...../.....

**Appendix F: Introductory Letter for Semi-structured Interview and Ethics  
Clearance Letter – Employer Participants**

<recipient's title>  
<company name>  
<company address>  
<date>

Dear <recipient's given name>

Thank you for your expressing your willingness to participate in the study that I am currently undertaking as part of my PhD.

The purpose of the study is to provide an analysis of how effective teamwork is conceptualised from the perspectives of graduating business students and employers as a basis to determine the core skills of teamwork that are expected of a business graduate at entry into professional employment. It is anticipated that findings will help establish closer alignment between business curriculum and employers' expectations, thereby ensuring the development of diversified graduates who are 'work ready' for the 'real' world.

Participation will involve a semistructured interview (approx. 45-60 min) that will place at a time and date convenient to you. Participation is voluntary and all interview responses will be totally confidential and anonymity assured. You may also withdraw from the study at any time. Your cooperation is most vital as the valuable information and experience you provide will contribute significantly towards understanding teamwork and improving skills development in undergraduate business curriculum. At the conclusion of the study, I would be delighted to provide you with a report summarizing the major findings and recommendations that have arisen from the study.

If you have any questions please feel free to contact me on <phone number> or if need confirmation of these details, please feel free to contact my supervisor <supervisor's name and contact details>.

I wish to express my appreciation and gratitude for your assistance. I will contact you within the next week with the anticipation of arranging a suitable time and place for the interview.

Sincerely,

<signed by the researcher>

enc: Ethics Clearance Letter

## **Appendix F: Continued**

### **Ethics Clearance Letter**

<recipient's title>  
<company name>  
<company address>

<date>

Dear <recipient's given name>

RE: Graduate Skills Research - <student's name>

I hereby confirm that <student's name> is undertaking supervised PhD research in the area of graduate skills.

Her research has developed through a Candidacy period that has been approved by the Graduate Studies Committee of <university's name>. Associated with that approval is the agreement of the Committee as to the research methodology to be used.

In addition, <student's name> has been required to gain a University-wide ethics clearance in relation to the research. Her ethics clearance, 'Form C' <form number>, was approved in <date> and is valid till <date>.

In order to gain the relevant clearance, she was required to guarantee anonymity to organisations and individuals involved in the study. Thus, it is the cumulative results from respondents that used in analysis, and it is part of my role as the research supervisor to ensure that the de-identifying process is completed and no corporate or individual names are included in the PhD manuscript. Similarly, research participants are advised that they may withdraw from the study at any time without penalty.

I am grateful for your assistance in participating in this study. <university's name> has always had a strong 'practical' emphasis and a significant part of this is due to the cooperation which occurs between corporate and university personnel.

Sincerely,

<signed by supervisor>  
<supervisor's contact details>

## **Appendix G: Semi-structured Interview Schedule - Student Participants**

**Opening Statement:** the purpose of this interview is to gain a better understanding about how teamwork is conceptualised from the student perspective. The information that is gained from these interviews will assist educators to better facilitate the development of students' teamworking skills and, ultimately, enhance their employability.

As indicated in the introductory letter and consent form, your participation is voluntary and all interview responses will be totally confidential and your anonymity assured. You may also withdraw from the study at any time.

As we go through the interview, if you have any questions about why I am asking you something or if you need further clarification, please feel free to ask. Do you have any questions before we begin?

### **Interview questions:**

#### Section A: Perceived Skills Expected in New Business Graduates

1. What are the five most important generic (or universal) skills needed at entry into professional employment?

#### Section B: Elements of Effective Teams and its Members

2. What is your definition of a team?
3. Visualising a team project that you were last engaged in, what did you do to help make the team successful?
4. What specific generic skills and/or characteristics does an individual need to have to successfully perform in a team?

## Appendix G: Continued

### Section C: Basic Demographic Information of Participants

1. Name: \_\_\_\_\_  
(please write an alias or alternative name)

Please indicate by placing an X beside the most correct answer.

2. Gender: Male \_\_\_\_\_ Female \_\_\_\_\_
3. What category best represents your age?  
20-24 \_\_\_\_\_ 25-29 \_\_\_\_\_ 30-34 \_\_\_\_\_ 35-39 \_\_\_\_\_ 40+ \_\_\_\_\_
4. Is English your first language? Yes \_\_\_\_\_ No \_\_\_\_\_
5. Are you enrolled as an International or domestic student?  
International \_\_\_\_\_ Domestic \_\_\_\_\_  
Country of Origin \_\_\_\_\_
6. What is your employment status?  
current, full-time \_\_\_\_\_ current, part-time \_\_\_\_\_  
never been employed \_\_\_\_\_ not presently employed \_\_\_\_\_
7. What is your involvement in team-oriented sports?  
I am currently playing on a team \_\_\_\_\_  
I have played on a team in the recent past \_\_\_\_\_  
I have never played a team sport \_\_\_\_\_

Thank you for participating in this research study.

## **Appendix H: Semi-structured Interview Schedule - Employer Participants**

**Opening Statement:** the purpose of this interview is to gain a better understanding about how teamwork is conceptualised from the employer perspective as a basis to determine what ‘required mix’ of teamwork skills are expected of a business graduate at entry into professional employment. The information that is gained from these interviews will assist educators to better facilitate the development of students’ teamworking skills and, ultimately, enhance their employability.

As indicated in the introductory letter, your participation is voluntary and all interview responses will be totally confidential and your anonymity assured. You may also withdraw from the study at any time.

As we go through the interview, if you have any questions about why I am asking you something or if you need further clarification, please feel free to ask. Do you have any questions before we begin?

### **Interview questions:**

#### Section A: Perceived Skills Expected in New Business Graduates

5. What are the top five key generic skills that you, as an employer, expect in an entry-level business graduate?

#### Section B: Elements of Effective Teams and its Members

6. What is your definition of a team in relation to the workplace?
7. Visualising an effective team within your organisation, what key elements made the team successful?
8. What specific skills and/or personal attributes does an individual need to have to perform successfully in a team?

#### Section C: Perceptions about Teamwork Deficiencies in New Business Graduates

9. Has there been a difference between what teamwork skills you expected graduates to have at entry into employment and what they actually demonstrated?

## Appendix H: Continued

### Section D: Basic Demographic Information of Participants

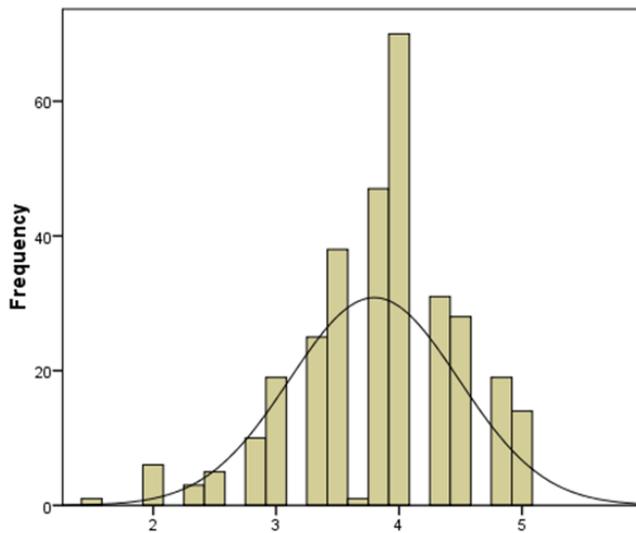
8. Name: \_\_\_\_\_  
(please write an alias or alternative name)
9. Gender: Male \_\_\_\_\_ Female \_\_\_\_\_
10. What is your area within business? \_\_\_\_\_  
(e.g., Accounting, Business Administration, Human Resources, etc.)
11. What is your position in the organisation/company? \_\_\_\_\_
12. Please indicate the managerial level of your position by placing an X beside the most correct answer:
- Top-level management \_\_\_\_\_  
Middle-level management \_\_\_\_\_  
First-level management \_\_\_\_\_
13. How many years have you held this position?
- 1-11 months \_\_\_\_\_ 4-6 years \_\_\_\_\_ 10+ years \_\_\_\_\_  
1-3 years \_\_\_\_\_ 7-9 years \_\_\_\_\_
14. What business sector best defines your organisation/company?
- Private sector \_\_\_\_\_ Public sector \_\_\_\_\_
15. How many people are employed by your organisation/company?
- less than 20 employees \_\_\_\_\_ 100+ employees \_\_\_\_\_  
20-99 employees \_\_\_\_\_ Not sure \_\_\_\_\_
16. Are graduates hired into a Graduate Training Programme within your organisation/company?
- Yes \_\_\_\_\_ No \_\_\_\_\_
17. If applicable, what is the duration of the Graduate Training Programme?
- less than 3 months \_\_\_\_\_ 7-11 months \_\_\_\_\_ 2 years \_\_\_\_\_  
4-6 months \_\_\_\_\_ 1 year \_\_\_\_\_ 3+ years \_\_\_\_\_
18. On average, how many business graduates do you hire each year?
- 1-5 \_\_\_\_\_ 11-15 \_\_\_\_\_ 21-25 \_\_\_\_\_  
6-10 \_\_\_\_\_ 16-20 \_\_\_\_\_ 26+ \_\_\_\_\_

Thank you for your participation in this research study.

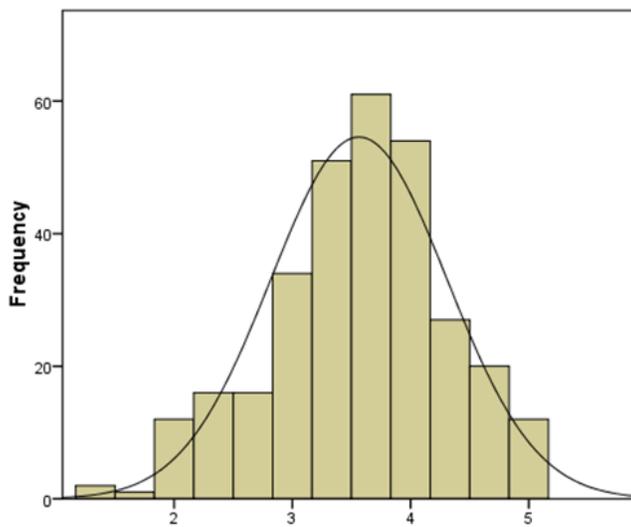
## Appendix I: Histograms of Normal Distribution

Histograms showing normal distribution of the remaining variables of the learning environment evaluated in the current research thesis.

Intellectual Motivation scale:

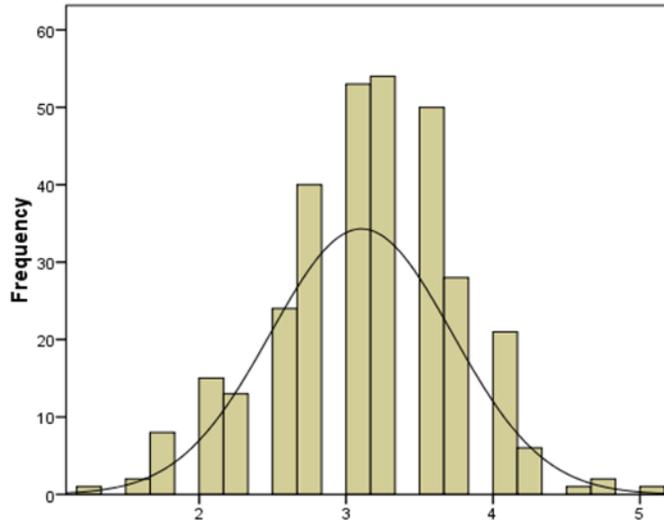


Appropriate Assessment scale:

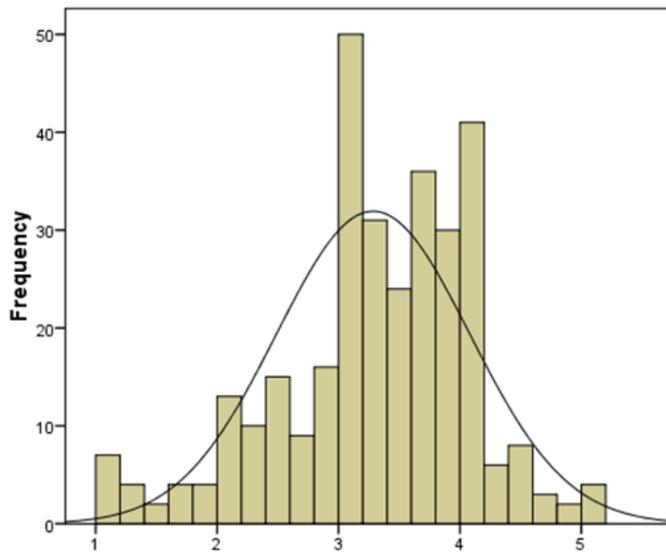


## Appendix I: Continued

Appropriate Workload scale:

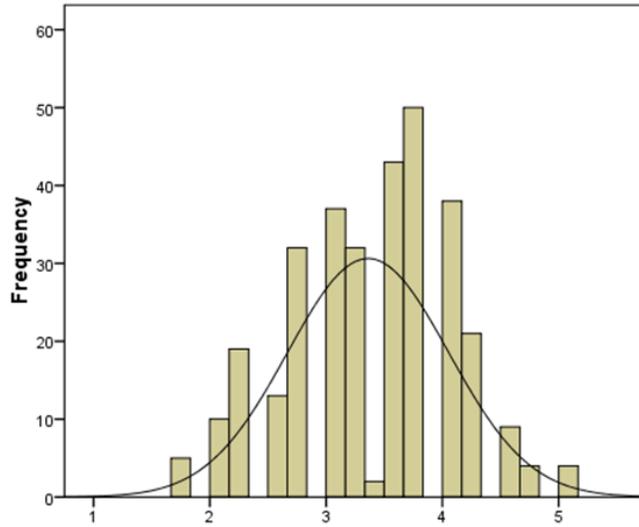


Good Teaching scale:



## Appendix I: Continued

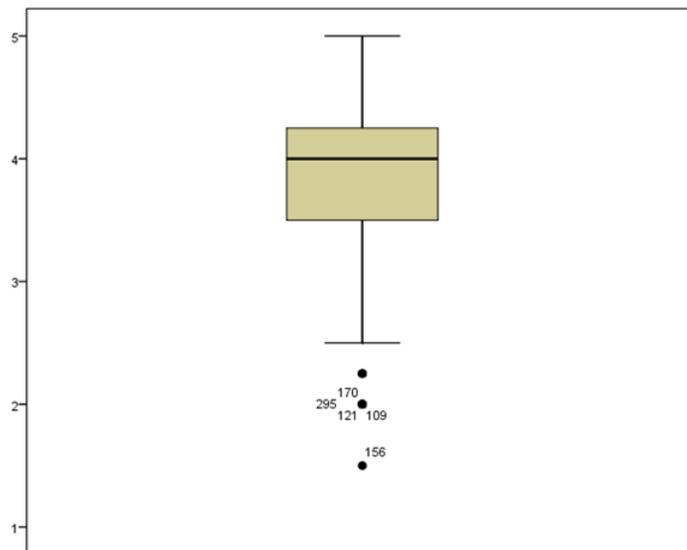
Clear Goals and Standards scale:



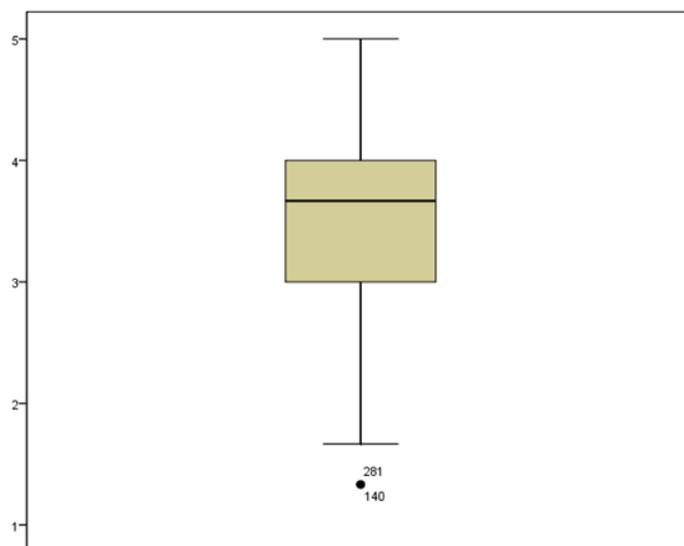
## Appendix J: Box-whisker Plots of Normal Distribution

Box-whisker plots showing normal distribution of the remaining variables of the learning environment evaluated in the current research thesis.

Intellectual Motivation scale:

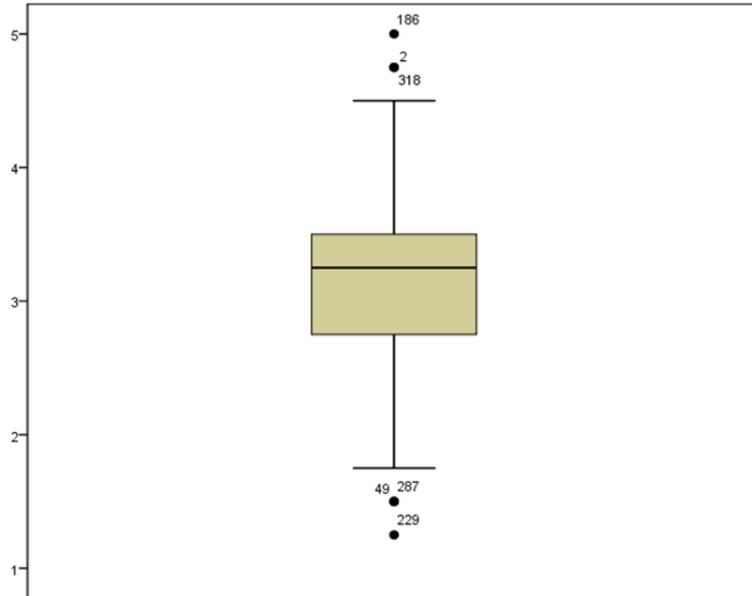


Appropriate Assessment scale:

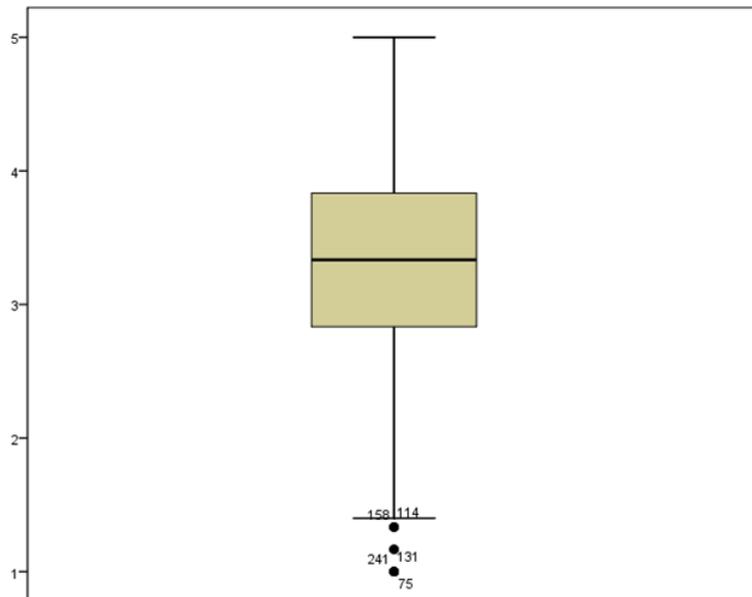


## Appendix J: Continued

Appropriate Workload scale:



Good Teaching scale:



**Appendix J: Continued**

Clear Goals and Standards scale:

