Andragogy for the Virtual Learning Environment: Challenges and Changes in Developing Graduate Competencies for Global Virtual Teamwork.

A thesis submitted in fulfilment of the requirements for the degree of Master of Business

Sally Parrott
Graduate Diploma of Writing and Editing, Deakin University, Melbourne.
Diploma of Vocational Education and Training, Swinburne University, Melbourne
Diploma of Training and Assessment, Swinburne University, Melbourne.
Diploma of Advertising, RMIT University.

School of Management
College of Business
RMIT University

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DECLARATION

I certify that except where due acknowledgment has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

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“A journey of a thousand miles begins with one step.” (Lao Tzu, 6th Century BC)

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ABBREVIATIONS

IBL  Inquiry Based Learning
ICT  Information Communication Technology
TTF  Task Technology Fit
PBL  Problem Based Learning
ABSTRACT

The increasingly global focus of business has resulted in the growing importance of global virtual teams, which transverse cultures, time and technology. In order to be able to work in these global virtual teams upon graduation, students are expected to have high level intercultural competencies, to communicate and collaborate, across cultures using information communication technologies (Davies, Fidler & Gorbis 2011). This is placing pressure on universities to design learning opportunities for students (especially business students) that are authentic, experiential and build skills to handle technology and intercultural communication and collaboration (Guffey & Loewy 2010).

This research study aims to examine the question: what challenges are presented, and changes required, to adapt authentic, experiential learning opportunities to the virtual environment in order to develop students’ competencies to communicate interculturally and collaborate effectively in global virtual teams? The research is located within theories associated with experiential learning and authentic learning. It explores how these theories can be extended to student learning in, and for, the global business context, using the virtual learning space. These theories initially developed for physical learning environments and adapted for the virtual learning context, have only recently been explored for adaptation to global learning settings where learners are situated, simultaneously, in many geographical locations. This research is designed to explore what changes need to be made to adapt authentic, experiential learning opportunities to these multi-cultural, multi-temporal, global virtual contexts.

The research is based in an investigation of a case study of students located in three countries (Australia, Ireland and USA) who used technology to communicate and collaborate as members of global virtual teams to solve a global problem for an industry partner. Participants in the research were chosen from this student body, to present, through interviews and personal reflections, their experiences of communicating and collaborating as members of several global, virtual teams.
Chapter One: Introduction

1.1 Background

The aim of this research is to identify how andragogy (adult learning theory) can be used to design learning opportunities to graduate students with competencies that contribute to the effective operation of global virtual teams. The importance of this is evidenced by the fact that business organisations are increasingly operating in the global environment. Competencies include, in this instance, ‘the skills, knowledge, experience, attributes and behaviours that individuals need to perform a job effectively’ (Hirsch & Stabler 1995; in Horton, Hondeghem & Farmham 2002 p.4), for communicating and collaborating across cultures as members of global virtual teams. Given that the focus of this research is on graduating students with real-world competencies, the chosen andragogy combines elements identified as typifying authentic learning and cycles identified as typical of experiential learning practice. The research recognises, as its starting point, that business is rapidly adopting geographically (increasingly virtual) distributed teams through which to engage as global entities. Current research identifies that communicating (interculturally and collectively) and collaborating effectively in global virtual teams, requires not only unique competencies but also that these are transferable to new contexts (Mangier-Watanabe et al. 2017; Taras & Ordeñana 2015; Zettinig, Mockaitis & Zander 2015).

In response to these existing and emerging business needs, educational institutions are being encouraged to prepare students with the competencies required to communicate and collaborate (using multiple technologies and software) across many cultures, temporal locations and time zones. However, despite agreement between business and educational authorities that there is a need to graduate students with these competencies, there has been little discussion of the andragogy required to guide academics in how to design learning opportunities for students to develop these skills.

To address this gap, this research asks the question: what challenges are presented, and changes needed, to adapt authentic, experiential learning opportunities to the virtual
environment in order to develop students’ competencies to communicate interculturally and collaborate effectively in global virtual teams?

This chapter provides the context for the research. The research question is placed against the background of challenges facing business and education to explore andragogical approaches to design learning opportunities for the virtual environment. Andragogy defined by Knowles (1968) as the ‘art and science of helping adults learn’ (p.351) assumes adult learners can direct their own learning; draw from their life experiences; are interested in applying knowledge immediately; have learning needs associated with their social roles; and are motivated internally (Merriam 2001). Thus, andragogy is appropriate in this research as the focus is on students who are considered to be adult learners, engaged in a learning opportunity that enables them to draw on their experience, apply knowledge learnt as part of engaging in interactions with others, and be internally motivated. This chapter also explains how the research design relates to the broader significance of the research. Finally, it introduces the structure of the thesis beyond this introductory chapter.

1.2 The Business Challenge

The increase in the exchange of knowledge, trade and capital around the world, driven by technological innovation, has created a fully globalised business world (Chen 2005; Reimers 2013). As a result, business is being conducted both globally and interculturally. Companies that harness the ability to effectively communicate and relate to other cultures enjoy a competitive advantage (Benton et al. 2009). This is driving the twin demands for employees with intercultural business communication skills (Kotthoff & Spencer-Oatey 2007), and for educational institutions to prepare students for this new world of work. Intercultural business communication involves communication within and between businesses from more than one culture and geographical location (Chaney & Martin 2014). The rapid development of technology, digital devices and new media, has led to an acceleration of intercultural communication being conducted online in this global business context (Chen 2012). This has led to claims that the setting in which intercultural communication takes place has an influence on relationships, expectations, and behavioural norms and rules (Kim 1980). Of the seven social contexts for intercultural communication she identified, - political, therapeutic, immigrant acculturation, sojourner adjustment, educational, technology transfer and business organisation, - the last three are relevant to the
research question. That is the research is focused on how educational institutions can encourage students to use technology transfer to develop students’ competencies to communicate and collaborate in the virtual, multicultural and multi-temporal environment that characterises business organisations in the twenty-first century (Grosse 2002; Samover et al. 2014).

Intercultural communication and collaboration skills are identified as the foremost skills necessary for working in global virtual teams (Chen 2012; Shuter 2012). Global virtual teams have been described by Horwitz, Bravington and Silvis (2006) as culturally diverse, technologically mediated, geographically dispersed groups of people who work on a common task. Global virtual teams are being increased established by companies to leverage expertise and remain competitive (Fuller Hardin & Scott 2007). Indeed, Davies Fidler and Gorbis (2011), argue that global virtual teams are now so ubiquitous that intercultural competency and virtual collaboration have become essential skills for global employability.

Industry’s initial response to the challenge of developing employees with intercultural competencies was to rely on international job assignments (Stahl 2001). However, given the time and cost involved, together with recognition of the need to assess behaviours of employees in real situations (Kealey & Protheroe 1996), a range of practice-based business techniques were designed to identify what were typical employees’ behavioural responses in intercultural situations where cultural awareness was required (Alexander 2000; Gregersen, Morrison and Black 1998; McLoughlin 2001). These techniques included behavioural assessments of intercultural readiness (Brinkmann & Weerdenburg 2014) and of cultural intelligence, (Earley, Ang & Tan 2006); together with the identification of a development inventory plan (Bennett 1986).

There have been some attempts to identify graduate intercultural competencies. One example is the Intercultural Competency Assessment (INCA) Project (n.d) that sought to identify what intercultural competencies were needed by engineering graduates working in multicultural project teams. The outcome of the project was a framework of intercultural competence that included six of Kühlmann and Stahl’s (1996) behavioural competencies and three elements related to Ward’s (2001) affective, behavioural and cognitive model of acquiring intercultural competence. However, studies of the use of the INCA Project framework found that although it was useful for an initial diagnosis of an individual’s intercultural competencies it had some
weaknesses. Typical of these limitations were that it did not identify education strategies to develop these competencies, nor the intercultural competencies needed to develop collective, collaborative decisions. Furthermore, it did not identify a candidate’s potential for development, or identify what behaviours are needed for intercultural competence (Prechtl and Lund 2007). Finally, it did assist with diagnosing and/or developing intercultural competence of students suitable for recruitment for international work (Kinsat 2003).

In addition, it has been found that techniques applied in industry do not easily convert to the context of preparing students for work. They generally do not take into account andragogical factors that support educational learning design. They do not extend beyond developing introductory competencies into the more developed skills required by graduates for the analysis and synthesis of information, and they do not develop ability of participants to perform as collective, collaborative members of global virtual teams (Crossman 2011).

Similar challenges were found in the use of international simulations to develop participants as preparation for international assignments, for example the intercultural training used by the US Foreign Service and American Field Service and Youth for Understanding. While such simulations gave participants an opportunity to experience aspects of interacting and communicating in a culture different from their own, their effectiveness has been neither tested (Fowler & Pusch 2010) nor applied in educational settings. Instead educational designers, teachers and researchers are seeking to design learning opportunities in the virtual environment that cultivate students’ competencies for working across cultures. To achieve this there is need to explore how andragogy can be applied to the complex virtual global environment.

1.3 The Education Challenge: Developing Graduate Intercultural Competencies

Initial educational responses to calls by industry for graduates with intercultural skills was to encourage study abroad schemes that physically located students in different countries and cultures (Pascarella & Terenzini 2005). While travel abroad provides the opportunity for students to be physically situated in, and learn from, different cultures in which they are located, these schemes have been subject to increasing criticism given the uneven distribution of countries in which students can be placed (Salisbury, An & Pascarella 2013), and the growing evidence of the unequal ability of students to take advantage of this experience.
given costs. This has led to criticism that travel abroad learning opportunities favour more privileged students. Colucci, Costa and Silva (2015) claim that even schemes that provide government financial support, such as the highly successful European Region Action Scheme for the Mobility of University Students (ERASMUS) programme, only reach 3% of the total European higher education student population. In terms of individual countries, as recently as 2014, France had only 2.1 percent and Italy only 1.6 percent of tertiary students undertaking an international study experience (Valle, Normandeau & González 2015). Such inequity has led educational institutions to consider the design of international learning opportunities using the virtual environment that are more accessible and scalable.

Meanwhile, advances in technology provide the opportunity to explore how platforms, tools and techniques can be used to create learning opportunities to develop competencies needed. This relates not only to how business prepares employees for engagement in global virtual teams, but how educational institutions prepare students with competencies needed for employment in global virtual teams, including what changes need to be made to existing learning theories. This sets the purpose for this research. The next section presents an overview of existing andragogy, identifying two related learning theories that appear appropriate for developing graduates with competencies that are both realistic and relevant to enable them to become effective members of global virtual teams.

1.3.1 Andragogy for the Online Environment

Andragogy relates to the foundational theory of adult learning (Merriam 2001). Knowles (1980) proposed that andragogy is distinguished from pedagogy that focuses on childhood learning, primarily as it focuses on adults who are more self-directed and expect to take responsibility for their decisions. Andragogy shifts the responsibility of acquiring knowledge away from the teacher to the learner (Pew 2007). As the current research is focused on the competencies required of graduates from higher education, in which students fall into the category of adult learners, andragogy is relevant given its emphasis on the need for adult learners to know why they need to learn something, to learn from experience and to problem solve as self-directed learners.
However, as this research study requires adult learners to learn in situ and often in a non-linear way, heutagogy is also relevant. Heutagogy is defined as the study of self-determined learning (Hase & Kenyon 2000). According to Blaschke and Hase (2016), heutagogy takes a learner-centred approach which places more emphasis on the learner determining their own learning through personal experiences. As Heutagogy is pertinent to learning online via digital technologies it too is relevant to this study that is located in an online, digital learning environment.

1.3.2 Learning Theories relevant to the Virtual Environment

Learning theories can be identified as falling within two main categories, cognitive and behavioural. Cognitive theories are described by Schunk (1996) as being concerned with acquiring knowledge and skills, forming mental structures and processing information and beliefs. Behavioural theories are described by Skinner (1953) as being concerned with the association between stimuli and responses. Given that this research relates to learning design for the virtual environment to develop graduate skills for working effectively in the new global virtual environment of business, there is a need to identify a learning design that develops both cognitive and behavioural skills. Three potential learning theories, situated, authentic and experiential, are explored below.

1.3.3 Situated Learning Theory for Learning in the Virtual Environment

Situated learning theory emerged from the early work in the 1980s on organisational studies by John Seely Brown who was particularly interested in the organisational implications of computer-supported activities. Situated learning was described as ‘the notion of learning knowledge and skills in contexts that reflect the way the knowledge will be useful in real life’ (Collins and Brown 1988, p.2). In a seminal text on situated learning, Brown, Collins and Duguid (1989) emphasised the importance of placing learners in actual activities and situations in order to develop cognition. This was later echoed by Jonassen (1991) and McLellan (1994) who identified situated learning as being effective for promoting advanced knowledge acquisition. Hein (1991) also claimed that cognitive learning occurs when learners actively construct knowledge for themselves. These features are best exemplified in the study abroad schemes noted earlier in this chapter, where students were situated in industry in various countries with different cultures.
In moving beyond the actual physical work placement of students to the virtual, Herrington, Reeves and Oliver (2010) proposed a learning design to provide the opportunity for students to explore the interdependence between cognition and situation in the virtual environment. With its focus on enabling the ‘situation-ness’ of working in virtual teams, these authors explored how new virtual learning design could provide authentic learning experiences for students.

1.3.4 Authentic Learning Approaches for Learning in the Virtual Environment

Authentic learning emerged as education changed from a focus on memorising, to synthesising knowledge, skills and attitudes. This move was made in response to industry complaints that graduates from universities knew a lot of facts but did not have the skills required to solve real working problems (Gulikers, Bastiaens & Martens 2004). Authentic learning opportunities seek to connect what students are taught in class to real-world issues, problems, and applications (Pearce 2016). This encourages students to learn through the exploration of concepts in contexts that involve relevant and real-world problems and projects (Donovan, J Bransford & M Bransford 1999). In other words, authentic learning focuses on developing graduates’ competencies for future professional practice (Herrington & Oliver 2000; Honebein, Duffy & Fishman 1993). Authentic learning design provides students with the opportunity to develop cognitive skills to solve real world problems that are complex, and thus stimulate higher order thinking processes (Newmann & Wehlage 1993).

As a learning process, students develop knowledge, skills and attitudes required for effective performance in new problem situations (Birenbaum 1996; Downing & Herrington 2013). To provide an authentic learning environment, tasks must be realistic and reflect the way knowledge will be used in real-life (Herrington & Oliver 2000; Nicaise, Gibney & Crane 2000). Authentic learning design can, itself, include a variety of learning approaches such as Problem-based learning, Inquiry-based learning and Experiential learning.

Problem-based learning (PBL) is used extensively in the health and engineering disciplines in which problem solving of complex issues is important (Rhem 1998). It is claimed that it has been effectively applied to improve engagement of engineering students in a distance learning mode (Brodie 2009), and to assist engineering students to learn how to collaborate virtually (Jesiek, Borrego & Beddoes 2010). In the virtual environment a PBL approach has been found to assist public health students to develop global virtual leadership skills (Konings 2018). Zeittnig (2015) claims that a problem-based learning approach leads to the
development of a rich competence base around leading and working in global virtual teams. Saatci (2008) also claims that a PBL approach has helped students to understand the complexities involved in conducting intercultural communication in virtual global team.

However, there is debate as to the effectiveness of PBL in the virtual environment. Coryell, Spencer and Sahin (2014) claim that cross-cultural learning has been found to be most effective when grounded in a cultural problem-solving experience. Additionally, Kirkwood and Price (2014) argue that this approach is not well suited to online learning due to the challenge to adequately accommodate the PBL process and the variety of problems that can arise in a virtual environment (such as difficulties with communicating across time and distance). Despite the stated advantages of applying PBL in a virtual setting to assist members of global virtual teams in solving multiple problems, some authors have doubts about its applicability to all situations. Brodie (2009) also points out that learning outcomes can be compromised by the twin demands of needing to establish online team relationships while providing a solution to a problem. Indeed Konings (2018) found that staff and students required significant coaching and support to manage both the problem-based learning and learning in the virtual environment. Given the uncertain outcomes of using a PBL approach, coupled with its lack of use in general business (outside engineering and health), it was considered that this approach to learning design was not appropriate in this instance.

Inquiry-based learning (IBL) is an educational strategy used extensively in the field of science as students learn to construct knowledge by following scientific discovery methods similar to those of professional scientists (Keselman 2003). It is comparable to problem-based learning as both are based in constructivism and involve finding and resolving solutions to problems using problem solving skills (Pedaste & Serapuu 2006). Inquiry-based learning has been used as an instructional approach to develop students’ general inquiry abilities, to help them acquire investigation skills and understand scientific concepts and principles (Edelson, Gordin & Pea 1999). It has also been used in foreign language learning to encourage learners to inquire about the culture of a target language and then to share their research inquiries and findings with peers (Poteau 2015). According to Stathers (2008) inquiry-based learning can assist students with understanding different worldviews and help them to examine those views and respect them, even if they don’t always accept them. For this reason, IBL has been used in secondary education to deliver international perspectives,
most notably by the International Baccalaureate (IB) program, which encourages critical inquiry and interaction with local communities and cultures.

In a counterpoint, the minimal guidance implicit in IBL approaches can negatively impact learning outcomes (Potea 2015). Kirschner (2007) also states that minimally guided approaches can be less effective than those that provide guidance to support the cognitive processing necessary for learning. According to some authors, the lack of verifiable research and a narrow focus on scientific inquiry has made it difficult to establish IBL as sufficient for developing intercultural competence in secondary education (Perry and Southwell 2011). Due to these and previously identified issues, this learning theory was not considered applicable or as suitable as the theory associated with experiential learning for the purposes of this research study.

1.3.5 Experiential Learning Design for Learning in the Virtual Environment

Experiential learning design is explained as enabling students to undertake tasks as they would in a real-life application (see Knobloch 2003; Ng, Dyne & Ang 2009). It has its theoretical base in several disciplines. Dewey (1938) identified experiential learning from an educational philosophy perspective, Lewin (1936) from a social psychology perspective and Piaget (1971) from a pure psychological perspective. In the 1980s Kolb (1984) drew from all these perspectives to develop a holistic model that identifies experiential learning as ‘a continuous process grounded in experience where knowledge is continuously derived and tested out in the experience of the learner,’ (p. 27). He identified four stages of an experiential learning cycle in which learners become engaged. In the first stage (often referred to as ‘doing’) the individual learner engages in action about a concrete (real) experience. In the second stage (referred to as the ‘watching’ stage) the learners reflect and observe on their concrete experience. The third stage (often referred to as the ‘thinking’ stage) in which the learner abstracts and conceptualises from their learning experience. The fourth stage (often referred to as the ‘testing’ stage) in which the learner plans further action to actively experiment with what they have learnt and make adjustment for further learning to confirm the knowledge gained. The four stages enable individuals to learn what is new and divergent from existing knowledge and how to assimilate, converge and accommodate existing and new knowledge (p. 143). This learning framework recognises that individual learners experience of these learning cycles varies depending on their learning style. In turn,
these were influenced by life experiences (Kolb 1984), culture and birth and residence (Joy & Kolb 2007).

In his later writing, the same author also identified the influence of the actual setting in which learning occurs (learning space), or the social and cultural setting in which a person is immersed (A. Kolb & D. Kolb 2009). This led him to identify learning as a transaction between the learner and the environment (A. Kolb & D. Kolb 2009). The importance of this finding has been highlighted in the second decade of the 21st century, as the digitisation of global business that presented educational institutions with the need to embed international perspectives into all curriculum, was assisted by the emergence of new digital technologies that could be utilised for educational purposes. To take advantage of this requires a dual focus on designing experiential learning opportunities that are also authentic, particularly in regard to skills for communicating and collaborating in global virtual teams (Davies et al. 2011). The connection between authentic and experiential learning is explained by A. Kayes, D. Kayes and Kolb (2005) in their contention that when experiential learning is situated in an authentic environment it increases the ability of the learner to develop deep, cognitive knowledge that is transferable to new contexts. This also supports the more recent claim by Downing and Herrington (2013) in their discussion of teacher education that experiential learning (as a form of applied learning), when connected with authentic learning, realistic teacher education, situated learning and reflective practice, can increase levels of engagement in online learning and better prepare students for the workplace.

While considering this research in relation to the virtual (global) learning environment, it becomes clear that a combination of an authentic and an experiential learning opportunity, may assist students to develop competencies for working in global virtual teams in which cross-cultural interaction requires students to constantly adapt knowledge to new cultural and social contexts (Taras & Ordeñana 2015). Integrating these learning concepts presents the opportunity to explore how an authentic, experiential learning opportunity can be used in the virtual environment to prepare graduates for the new global, virtual, multicultural and multi-temporal world of work.

The integration proposed in this thesis is based in Herrington and Oliver’s (2000) instructional design framework for conducting authentic learning in multimedia
environments. Through their study, they identified nine elements needed for a virtual learning environment to be regarded as authentic:

1. reflects the way knowledge will be used in real life
2. provides authentic activities
3. presents access to expert performances and the modelling of processes
4. provides multiple roles and perspectives
5. supports the collaborative construction of knowledge
6. promotes reflection to enable abstractions to be formed
7. promotes articulation to enable tacit knowledge to be made explicit
8. provides coaching and scaffolding by the teacher at critical times
9. provides for authentic assessment of learning within the tasks (Herrington & Oliver 2000).

This framework has been used to assess the authentic nature of forms of online learning design as online role play (Jones & McCann 2005), web-based learning (Huang 2002) and technology-underpinned learning applications (Lombardi 2007). However, at the time this research commenced, it had not been used to explore design of authentic, experiential learning opportunities for the virtual environment designed to assist students to develop skills for global, virtual, intercultural communication and collaboration skills (Brewer et al. 2015; Matthews & Thakkar 2012). Further, while this framework has been used to identify these different approaches to learning design, it predated the emergence of a plethora of new technologies that allow different forms of communication (written, verbal and visual) to occur.

In order to explore the connection between authentic and experiential learning in this study, these nine authentic learning elements are loosely extrapolated to identify clusters of features related to the characteristics of each of the four cycles of experiential learning. It is proposed by the researcher that Cycle 1 of the experiential learning cycle can be viewed as involving the first four elements of the instructional design framework; that Cycle 2 could be related to the fifth and sixth elements; that Cycle 3 is associated with the seventh element, and Cycle 4 with the eighth and ninth element. The final element, authentic assessment, while not explicit in the learning cycle, can be assumed to relate to the final (active experimental) cycle. This extrapolation is summarised in Table 1.
<table>
<thead>
<tr>
<th>Experiential learning cycle (Kolb 1984)</th>
<th>Elements of instructional design framework for authentic learning in multimedia environments (Herrington &amp; Oliver 2000)</th>
</tr>
</thead>
</table>
| Cycle 1: Concrete (real) experience     | 1. Reflects the way knowledge is used in real life  
2. Provides authentic activities  
3. Presents access to experts and modelling of processes  
4. Provides multiple roles and perspectives |
| Cycle 2: Reflection and Observation     | 5. Supports the collaborative construction of knowledge  
6. Promotes reflection to enable abstractions to be formed |
| Cycle 3: Abstraction and conceptualisation | 7. Promotes articulation to enable tacit knowledge to be made explicit |
| Cycle 4: Active experimentation          | 8. Provides coaching and scaffolding by the teacher at critical times  
9. Provides for authentic assessment within the task |

**Table 1** Elements of authentic learning mapped against the cycles of experiential learning (Extrapolated from Kolb [1984] and Herrington and Oliver [2000])

1.4 **The Design of the Research**

Given the lack of existing research related to development of the competencies required to engage in intercultural communication and for working effectively in global virtual environments, the research method chosen was one that would provide a deep understanding from a broad range of data sources. A qualitative methodology, using case study analysis of a small, but representative group of 16 participants, was chosen. This allowed for deep probing into what challenges there are for authentic, experiential learning in the virtual environment. Data was collected from two sources: interviews and written reflections of the participants, to allow a broad spread of data.

1.5 **Significance of the Study**

Exploring the challenges of adapting theories associated with authentic and experiential learning for application in the virtual environment in an educational institutional context is significant given the trend in education to use the virtual environment to enhance student learning. This requires learning design that uses the best aspects of existing theories underpinning learning design to adapt them for the virtual environment. In particular the focus is on how educational institutions can design authentic, experiential learning for the virtual environment to develop student competencies to engage effectively in global virtual
team projects. This is significant given that global virtual teams are increasingly characterising the global business environment. Graduates from educational institutions thus need to have these competencies to be able to operate in a fully globalised and technologically advanced business world (Guffey & Loewy 2010).

1.6 The Structure of the Thesis

The thesis is comprised of five chapters. This first chapter establishes the background for the research, identifies the research question, and clarifies the aim of the thesis in advancing knowledge in the field of andragogy.

The second chapter presents a review of the academic literature concerned with intercultural business communication, global virtual teams and educational strategies. These published works have a primary focus on research. The topics covered are: the global challenges facing business and the skills needs of graduates; the education and social sciences fields, which are invested in identifying how to educate tertiary students, so they graduate with the competencies for operating in global virtual teams.

The third chapter outlines the research design adopted for this study. It begins with how an interpretivist paradigm was applied to understand the experiences of the participants in the learning opportunity and how this perspective guided elements of the research design. The methodology is then presented, alongside the rationale for the selection of the case, the sample and the data methods, and the guidelines followed to maximise the trustworthiness of the data.

The fourth chapter describes what was found from participants’ responses. The aim of this chapter is to identify what the participants suggest were the challenges for adapting andragogy related to authentic, experiential learning to the virtual environment, in order to develop students’ competencies for communicating interculturally and collaborating effectively in global virtual teams. This analysis reveals three key themes that emerged from the findings.

The fifth chapter considers what change implications emerge from these findings in order to adapt theories associated with authentic and experiential learning for the virtual global
learning environment. The focus is upon using this context to develop competencies for communicating and collaborating effectively as members of global virtual teams. Finally, based on these findings, recommendations for further research are also presented.
Chapter Two: Literature Review

2.1 Introduction

This chapter presents a review of the literature concerned with, first, the business challenge caused by the development of global virtual business which requires employees with competencies for both intercultural business communication, and collaboration within global virtual teams. This is initially presented as an historical account of the emergence of the need for skills for intercultural communication as business internationalised. Literature upon the expansion of these skills into a broader range of competencies for global business, especially as it extended into the virtual environment, is then presented. In particular, research into the need for competencies associated with communication and collaboration within virtual global teams is discussed. This is followed by literature upon the competencies associated with using technology and social media to underpin effective communication and collaboration is outlined.

The second aspect of the review explores literature associated with the adaptation of andragogy for learning in the virtual environment designed to develop appropriate graduate competencies for working in global business. This is again presented, initially, as an historical account of literature upon education where the focus is on the development of students’ skills with intercultural communication. Literature upon learning designed to develop student competencies to work in global, virtual environments is also discussed. This leads to the third section of the literature, that is associated with learning designed to develop student competencies to communicate and collaborate as members of global virtual teams.

Finally, literature that identifies the challenges for the design of authentic and experiential learning opportunities is presented. Given the need to discuss the gap between business practice in developing employee skills, attitudes and behaviours for global, virtual practice, this literature review presents both scholarly and professional practice publications.
2.2 Part One: The Business Challenge

In this first part of the literature review, research is presented on the challenges faced by companies which operate in a globalised business world where intercultural communication and virtual collaboration skills are required to operate in the global, virtual teams that are deemed as necessary to remain competitive (Davies, Fidler & Gorbis 2011).

2.2.1 Training for Intercultural Communication on International Assignments

According to Liu (2012), the academic study of intercultural communication can be traced back to key theories developed by anthropologists in the 19th century. This includes Charles Darwin’s (1872) evolutionary theory which investigated the first non-verbal communication, and Sigmund Freud’s (1954) development of the concept of the unconscious and how we communicate subconsciously (Freud et al. 1976). Based in this research, early approaches to training for intercultural communication in Western society in the 1950s focused on understanding nonverbal communication (Rogers & Hart 2002; Williams 2005), rather than an exploration of how cultural differences may explain communication differences. For example, in America in the late 1950s, the training program for diplomats in the US Foreign Service Institute, designed by the anthropologist Edward T. Hall, focused on developing skills on how to communicate with people using non-verbal factors. Examples of this include training on the differences in communication behaviours between cultures, for example, how close to stand to a person from a different culture in conversation, where to look when communicating with a person from a different culture and when to move away from a person from a different culture (Rogers & Hart 2002). This emphasis, on the impact of culture on communication behaviours, led to intercultural communication being defined as ‘between persons of different cultures’ (Hall 1959, p 186).

This approach, while accepted as useful knowledge for American diplomats travelling in different cultures, has been criticised, firstly, for not sufficiently capturing the complexity of cultural differences (Shachaf 2008) and, secondly, for not providing opportunities for the trainee to experience problem solving through a whole breadth of cultural experiences (Bennett 1996). This led to subsequent scholarly research focused in how to develop a theoretical underpinning to more broadly understand communication between cultures (for example Kluckhohn & Strodtbeck 1961). However, this research was still substantially underpinned by the anthropological assumption that humans share biological traits and
characteristics which form the basis for the development of their culture. The lack of critique from either a sociological or political view resulted in an ethnocentric viewpoint, in which intercultural communication was assumed from the cultural beliefs and practices of one culture, rather than from an understanding of the viewpoints of many cultures (Hills 2002). As a result, this led to a value-oriented approach underpinning training in intercultural communication. Gallagher (2001) explains this as being based in a rank ordering of value preferences for cultural characteristics built on assumptions of human nature, man-nature, time, activity, and relational orientation. Brockner (2003) claims that this led to a tenuous link being recognised between knowing about cultural values and knowing how to behaviourally apply this knowledge to individual encounters. The result was that scholarly research adopted an overly simplistic assumption that was aligned with the, then dominant, colonial powers’ approach to manage cultural difference between conquered territories (Blasco & Gustafsson 2004). Recognised limitations in intercultural training built on these assumptions prompted a move away from the anthropological to embrace a sociological approach, in which intercultural communication was viewed from the perspective of how individuals behaved in intercultural encounters (Chen 1989).

Research by social psychologists in the 1960s began to move away from a focus on how to train people to manage intercultural communications from a singular (some would say ethnocentric) perspective for strategic purposes, towards how to assist people placed in different cultures to adjust their communication behaviours to new and different cultures. An example of this change in approach to training is the Cultural Assimilator developed by academics at the University of Illinois for the US Office of Naval Research. Designed to prepare sailors travelling abroad to interact appropriately with other cultures (Fiedler, Mitchell & Triandis 1971), this training program adopted the assumption that moving from one culture to another causes stress and anxiety. In order to alleviate this stress, and thus assist these sailors to be good ambassadors for their country, persons being placed on international assignments were to undertake a series of pre-departure tests to provide them with strategies to enable them to adjust their behaviour to the customs and values of the ‘target’ culture (Triandis 1972). Built on a self-instructional approach, the assignee was encouraged to answer a series of multi-choice questions that required them to identify what personal adjustments they would make to interpersonal encounters with people from a target culture. While this training approach did provide an overview of possible cultural encounters and actions for mitigating conflict, the written scenarios were criticised (by one of the very
academics that had prepared them) for their inability to replicate authentic intercultural interactions (Fiedler, Mitchell & Triandis 1971).

Meanwhile a worldwide study of IBM employees by the prominent social psychologist, Geert Hofstede in the late 1960s, identified a framework of four typical cultural dimensions through which cultural differences can be recognised. The four typical cultural differences identified were chartered along a spectrum from Individualistic to Collectivist; from Masculine to Feminine; and were based on preferred comfort with the degree of Power Distance between people of different standing, and also based on the degree to which people from different cultures were prepared to tolerate Uncertainty Avoidance (Hofstede 1984). A fifth dimension, Time Orientation (long term or short term) was added following a study by Bond (1991). Finally, a sixth dimension, Indulgence in Enjoyment, Freedom and Friendship (versus restraint and hardship), was added following a World Values Survey in 2010.

Hofstede’s framework has had significant influence on approaches and education strategies designed to build skills for intercultural differences and communication. For example, leadership programs have been designed to explore how to engage in cross-cultural conversations, especially when there is need to understand cultural similarities and differences in order to achieve productive interactions (Connerley & Pedersen 2005). However, while Hofstede’s (1984) findings have been widely cited, they are also one of the most highly criticised (for example, Jones 2007), particularly for their assumption of cultural homogeneity (Shachaf 2008), and their lack of relevance in addressing the common values emerging from globalisation (Mead 2005; Papaconstantinou 1995).

While Hofstede’s framework underpinned thinking on, and training in, cultural similarities and differences throughout the 1970s and 1980s, by the 1990s the observed limitations prompted further research by leadership theorists to identify how culture is related to societal, organisational and leader effectiveness (House 1998; Dickson, Hartog & Mitchelson 2003). One such study was the Globe Leadership and Organisational Behaviour Effectiveness (GLOBE) Research Program (1991). This research program assumed a more holistic approach to cultural differences, seeking to explore not just intercultural communication, but ‘the cultural values and practices in a wide variety of countries and to identify their impact on organisational practices and leadership attributes’ (House et al. 2002 p.3). While the GLOBE research program utilised an anthropological tradition of cultural assessment based on Kluckhohn and Strodtbeck (1961) research into behavioural factors required for cultural
interactions, it also incorporated Hofstede’s (1984) social science research into cultural dimensions. The outcome was the identification of nine dimensions that relate to both societal and organisational factors. These dimensions include behaviours related to: performance orientation, assertiveness orientation, future orientation, humane orientation, institutional collectivism, in-group collectivism, gender egalitarianism, power distance and uncertainty avoidance. In addition, in an attempt to liberate the research from the claims of US homogeny (House 2004), the research was expanded to take a more holistic approach to cultural difference by including 61 countries from both Europe and Asia.

In the 1990s, complementing this research, Trompenaars and Hampden-Turner (1998) designed a research project aimed at identifying the responses of globally-located business managers, to how cultural differences affect the process of doing business and managing. This research resulted in the identification of seven (dichotomised) dimensions of: universalism or particularism, individualism or communitarianism, specific or diffuse, neutral or emotional, achievement or ascription, sequential time or synchronous time and internal direction. These dichotomies were identified as important factors in understanding the impact of culture on employee and managers’ interactions in an intercultural environment. However, this research has also been criticised for its lack of allowance for individual preferences or variances on each dimension (Earley & Peterson 2004).

Adding further to the research of Trompenaars and Hampden-Turner was a research project undertaken by Kühlmann and Stahl (1996). This project explored how managers on short-term international assignments behave in critical cross-cultural encounters with the national host. In so doing, this project shifted the focus from collective cultural values of a nation that had dominated early research, to the cultural behaviours of individuals. It recognised variances in a person’s conduct with, or in, other cultures and as such, strengthened recognition of the behavioural element in intercultural exchanges and communication, with associated implications for training for intercultural competence. Through in-depth interviews, the research focused on identifying the behavioural tendencies, attitudes, and skills of 243 German managers who were, or had been, on an international assignment. Based on their findings they identified seven competencies as critical to success in international work assignments. These competencies included attitudes, skills and behaviours identified as: tolerance for ambiguity, behavioural flexibility, goal orientation, sociability and interest in
other people, empathy, non-judgementalness and meta-communication skills. These competencies were then used to inform a profile of a successful manager in intercultural business situations that was used to appraise management talent for international assignments and surface their need for intercultural training. As Kühlmann and Stahl’s research was based on real, physical intercultural business encounters their intercultural competencies addressed the criticism of more theoretical based training identified as lacking authenticity (Bennett 1996). Furthermore, Kühlmann and Stahl’s (1996) competencies for successful managers closely correlate to the traits of a successful intercultural worker identified earlier by Kealey and Ruben (1983) which is a person who is:

‘…open and interested in other people and their ideas, capable of building relationships of trust among people…. sensitive to the feelings and thoughts of another, expresses respect and positive regard for others, and is non-judgemental…tends to be self-confident, is able to take initiative, is calm in situations of frustration or ambiguity, and is not rigid… also a technically competent person.’ (Kealey & Ruben 1983, p 165-166).

Kühlmann and Stahl’s (1996) competencies also correlate with the key factors identified as affecting international managers’ effectiveness and adjustment on long-term international assignment (Black, Mendenhall & Oddou 1991). Strubler, Park and Agarwal (2011) suggest that there are similarities between these findings that identify a common recognition of the need to focus on the ability to handle stress (similar to the capability of tolerance for ambiguity and being non-judgemental); the ability to adjust to cultural toughness (similar to the capability of behavioural flexibility); and being socially adaptable (similar to the capability of being sociable and interested in other people) when working interculturally.

Further evidence of the importance of individual behavioural factors was identified in a behavioural study by Byram (1997) that identified a five-factor model for a person to be interculturally competent. Included in the Intercultural Communicative Competence model are behavioural characteristics for: having the right attitude, knowledge of themselves and others, skills of interpreting and relating another culture to their own, skills of self-discovery and interaction, and critical cultural awareness to make evaluations based on awareness of their own and others’ cultures.

In summary, by the end of the 20th century, research into intercultural interactions and communication had changed focus from an exploration of cultural differences at the macro level to identifying appropriate competencies (skills, attitudes and behaviours of individuals).
These developments led to a changed focus on how to assess, train and develop individuals for intercultural competency and intercultural communication, setting the stage for further (digital) disruption. The connection between these finding from the literature to the purpose of this thesis is highlighted in the next chapter in which the decision to use the Kühlmann and Stahl’s (1996) competencies to assist analysis of the research findings is explained.

Before leaving explanation of the literature findings on the challenge facing business, the next section turns to the literature upon emerging technologies and their use for communication purposes.

2.2.2 Utilising Information Communication Technologies for Intercultural Communication and Collaboration

Castells (1993) claims that Information Communication Technology (ICT) developments that occurred towards the end of the 20th century expanded cross-cultural business making as the main source of wealth creation and economic growth in the modern world. This resulted in intercultural communication being both more open and more challenging. Indeed, Kluver (2000) claims that the twin forces of globalisation and informatisation have created complex, multi-level forms of communication which have changed the nature and the context of intercultural communication. Samovar et al. (2014) concur that technology has added a level of complexity that has transformed the amount and nature of communication and how people connect.

The emergence of digital technologies presaged further need for change in understanding of, and training in, competencies (skills, attitudes and behaviours) required for intercultural interactions. The popularisation of the internet at the beginning of the 21st Century challenged established approaches to intercultural communication (Chen 2012). It is estimated that by the year 2000, 400 million people were using the internet, while fifteen years later, there were 3.2 billion people connected, including 2 billion in developing countries (International Telecommunication Union, 2015). This rapid and far-reaching uptake has had a profound effect on how people across cultures connect and communicate. Indeed, argues Chen (2012), new media technology has brought society and human interaction to a highly interconnected and complex level.
The outcome of this change, often termed a ‘digital disruption’, has resulted in a broadening of the definition of intercultural communication to become ‘a symbolic, interpretive, transactional, contextual process whereby people from different cultures negotiate, at varying levels of awareness, shared meanings’ (Schmidt et al. 2007 p 23). The complexity of this new mode of communication is illustrated by the many terms for intercultural communication, conducted over computers, that have developed. These include: intercultural cyberspace interactions (St. Amant 2002), computer-mediated communication (Ess & Sudweeks 2005), telecollaboration (Lee 2009) and virtual intercultural communication (Grosse 2002). Each of these online communication modes utilise ICT, eliminating temporal and spatial constraints to connect people instantly (Jimenez et al. 2017).

This expansion of digital communication technology has led to much faster and more direct intercultural communication than was ever before possible (St. Amant 2002). Indeed, Shuter (2017) claims that computer-mediated communication has overtaken face-to-face communication as the predominant form of intercultural contact. The speed and variety of options for communicating is increasing exponentially as faster internet connections and an ever-evolving host of synchronous and asynchronous tools are developed (Durak et al. 2017). This has significant implications for theory and practice of intercultural communication (Shuter 2017). It is thus surprising that research into the nature of information communication technology practices in computer-mediated environments has not been significant (St. Amant 2002), with studies only recently emerging of the impact of technology on intercultural competence required for working across cultures (Kramer, Shuffler & Feitosa 2017). Of particular importance for the purpose of this thesis, is the growth of global virtual teams and the associated competencies required for this.

2.2.3 Training and Education for Intercultural Communication and Collaboration in Global Virtual Teams

Advances in technology presaged a growth in global virtual teams. As global business advances, more reliance is being placed in the operation of global virtual teams (Jimenez et al. 2017; Shuter 2017). Global virtual teams are described as ‘groups of geographically, organisationally and/or time-dispersed workers brought together by information technologies to accomplish one or more organisation tasks’ (Piccoli, Powell & Ives 2004 p. 7). A recent
study reported that 50-70% of white-collar workers in OECD countries utilise virtual collaboration in their work projects, and that 20-35% of these involve collaborating across national borders (Kurtzberg 2014). Jimenez et al. (2017) argue that, as working across technology and boundaries has become both the norm, and omnipresent, companies are no longer even emphasising their global and virtual aspects.

Despite these changed conditions, there is evidence that at least half of global virtual teams fail to manage the complexities arising from global virtual communication and collaboration and as a consequence fail to meet strategic objectives (Zakaria, Amelinckx & Wilemon 2004). As a result, an expansion in employees’ competence is required to communicate across many cultures, geographical zones, and in the virtual environment, particularly if employment levels are to be maintained (Breathnach 2000). In turn this has led researchers to further suggest that education for these competencies requires a further move beyond the social science interest in educating for different cultures and environments, towards providing education in the social psychology of behaviours (Jimenez et al. 2017; Shuter 2012).

The move to incorporate the psychology of behaviours into tertiary education in order to understand how global virtual teams operate is hailed in the literature (see Taras et al. 2013), as requiring a re-look at earlier social psychology-based theories such as Allport, Clark and Pettigrew’s (1954) Intergroup Contact Theory and Tuckman’s (1965) four-stage model of small group development. Both theories identify the conditions necessary for working effectively in groups. Allport, Clark and Pettigrew (1954) identified four situational conditions for optimal group performance: equal group status within the situation; common goals; intergroup cooperation; and the support of authorities, law, or custom. Tuckman (1965) identified four stages of development in small groups: forming, storming, norming, and performing. Forming occurs as members establish their positions in the group and consider what procedures or rules they should follow. Storming happens when there is a conflict such as resisting an influencer in the group or rebelling against a set task. The norming stage begins as the group settles and starts to cohere. As members find new ways to work together, they start to accomplish the tasks, and set norms for group behaviour. The final stage is when the group is performing, which is characterised by the group achieving
their goals and being more flexible in working together. It is deemed essential that each stage is accomplished in order for the team to move to the next stage. Both theories have been utilised in studies of virtual teams, with Taras et al. (2013) drawing on intergroup contact theory to understand the success factors of global virtual teams. Their research identified a fifth condition for optimal global virtual group performance, that of the contact situation that needs to provide participants with the opportunity to become friends. This occurs through regular social interactions between members of global virtual teams, which enables them to learn more about each other and reduces preconceived perception of cultural difference. In turn, this leads to improvement in intercultural knowledge and understanding, changes in behaviour and improved global virtual team performance. In similar research, Connaughton et al. (2010) drew on Tuckman’s (1965) four stage development model to understand how team development occurs in temporary virtual teams. They found that relationships in temporary virtual teams had to develop rapidly in order for the focus to shift to the tasks, thus stressing the importance of the relational aspects of Tuckman’s model.

This emphasis on the importance of developing relationships correlates to Black, Meddenhall and Oddou’s (1991) earlier claim that expatriates need to be socially adaptable to adjust to new cultures. Kühlmann and Stahl (1996) also asserted that sociability and interest in other people is required for managers on international assignments to be interculturally effective. These findings reiterate Bandura’s (1977) conclusions about the importance of relationships, as well as confirming earlier research, that social contact and relationships improve intercultural cooperation and teamwork. Indeed, the Social Learning Theory (SLT) that developed as a result of this research proposes that much of our learning occurs in a social context, by observing and imitating others. More recently, several studies reported in McDonald and Cater-Steel (2016) provide examples of how Communities of Practice can facilitate SLT in both the face-to-face and virtual environment. In a similar vein, Jimenez et al. (2017) suggest that a perception of equal status is required to improve social cohesion. This research also extends the earlier findings by Cohen and Lotan (1995) that if equal status is not present between people, conflict can occur.

However, in applying an emphasis on relationships to global virtual teams, it was found that achieving perceptions of equal status in this new virtual work mode is more challenging, as leadership is not clear and members may have differing perceptions of power distance.
Jimenez et al. 2017). Similarly, attaining common goals through intergroup cooperation is strained by multi-temporal factors that thwart synchronous communication and group contact in a virtual environment. This research confirmed the finding of Brameld (1946) that ‘when groups are isolated from one another, prejudice and conflict grow like a disease’ (p. 245).

In summary, what these studies have found is that for global teams located in a virtual, multicultural and multi-temporal environment to work well, relationships and behaviours adopted by individuals are of prime importance. These findings have significance for learning designed to develop student competencies in working in global virtual teams, they suggest that learning design has to go beyond teaching about intercultural communication and collaboration, by actually engaging students in authentic learning encounters. Furthermore, that these encounters need to provide opportunities to develop meaningful relations between members of global virtual learning teams.

A further social psychology-based theory of relevance is the Theory of Uncertainty-Anxiety Management (Gudykunst 1998). Uncertainty-anxiety management theory enables examination of how anxiety is evoked when uncertainty is felt by individuals. Langer (1989) found that the uncertainty and subsequent anxiety that results from cultural interactions creates a drive to reduce uncertainty and to increase mindfulness of how people are communicating, especially for members from high uncertainty avoidance cultures. Anxiety can be caused by geographical displacement, lack of face-to-face opportunities, turnover of team members and lack of experience of many team members in working outside their own culture (Langer 1989), which are issues common to global virtual teams. Thus, uncertainty-anxiety management theory has implications for educating students to communicate and collaborate effectively in global virtual teams in order to develop behaviours which enable them to deal with the high levels of anxiety emanating from these issues.

Indeed, Brandl and Neyer (2009) found that the most important predictor of success in global virtual teams is the capacity of team members to deal with unknown factors. As part of a focus on training tailored to assist members of global virtual teams with cognitive behaviours increasing their ability to adjust to unknown situations, Brandl and Neyer (2009) proposed a combination of country-specific cultural orientation, cultural awareness education, and guidance for dealing with issues when working in virtual teams. Glanz, Rizzo & Graap
(2003) claim that when team members actively experience how to achieve solutions and activate supportive resources, they are more willing to explore unknown situations.

The final social psychology identified behavioural factor identified as relevant to operating effectively in global virtual teams is what has been referred to as ‘social dignity’. Ting-Toomey (1988) uses the concept of Face-negotiation theory to refer to a set of communicative behaviours that people use to regulate their social dignity and to support or challenge the social dignity of others. Face negotiation theory claims that this social dignity is an important glue to build trust, which O’Hara-Devereaux and Johansen (1994) claim helps in creating worthwhile virtual team relationships. Ting-Toomey (1988) explained further that ‘face’ is associated with respect, honour, status, reputation, credibility and competence and even loyalty, trust and obligation issues. He argued that an understanding of how a culture views these qualities can help to minimise misunderstandings and miscommunication between individuals from different cultures. Thus face-negotiation can have implications for global virtual teams where trust is said to be built by engaging in respectful, thoughtful communication that takes into account cultural differences (Jarvenpaa & Leidner 1998). Furthermore, Sarker et al. (2011) claim that showing respect to people from another culture, understanding the importance of fulfilling obligations, maintaining credibility and behaving honourably (Sarker et al. 2011) are important considerations for global virtual team success.

In summary, research into the skills needed to globally communicate and collaborate effectively has developed over time from an anthropological ethnocentric view of understanding another culture, to a more social science perspective of understanding cultural nuances in order to communicate, alongside the need to add a social psychology perspective of understanding the behaviours of people from different cultures. Applied to communicating and collaborating in global virtual teams, the competencies emphasised by learning theory now go beyond verbal communication to behaviours conducive to building relationships and trust. By developing greater understanding of the impact of different cultural dimensions on expectations, anxiety and uncertainty inherent in global virtual teams can be managed more effectively than in the past. Despite these findings, there is little research on how to assess or develop these competencies (Cagiltay, Bichelmeyer & Akilli 2015; Jimenez et al. 2017; Sinicrope, Norris & Watanabe 2007).
In addition to the competencies needed to communicate and collaborate interculturally, the expansion of technology and social media tools for communicating and collaborating in the virtual environment, particularly in global virtual teams, requires an exploration of the literature on how to develop competencies associated with the choice and use of appropriate technology and digital tools.

**2.2.4 Technical Skills for Intercultural Communication and Collaboration in Global Virtual Teams**

As technology evolves, so does the need for research into how digital media technologies may affect computer-mediated intercultural communication. Digital media technologies are described as digital resources that assist to effectively find, analyse, create, communicate and use information in a digital context (Cormode & Krishnamurthy 2008). Much of the early literature identified how basic Web 1.0 tools, (such as email, blogging, text messaging and posting) were used for intercultural exchanges (Lee 2009). More recent literature discusses how new media Web 2.0 tools further encourage content creation and interaction (through web sites, applications, blogs, pages and groups). Web 2.0 tools also stimulate user-generated content in the form of text, video, and photo postings along with comments, tags, and ratings (Cormode & Krishnamurthy 2008). According to Chen (2012) the distinctive characteristics of new media: digitality, convergency, interactivity, hypertextuality, and virtuality are influencing the form and content of intercultural communication. However, while each of these technology tools are capable of adaptation for use in educational settings, particularly if an educational institution provides easy platform access by students, research studies into the effectiveness of using these tools is only recently emerging. Before returning to this issue, the next section presents an overview of these new technologies.

The current Web 2.0 technologies and tools that are available for collaborative e-learning illustrate the emergence of verbal and visual communication tools as well as the more traditional written communication. Email, or electronic mail, was the earliest form of (written communication) digital technology. Email enables written messages to be transmitted over a telecommunications network (ComputerHope 2018).

Among newer technologies that enable more synchronous written communication is Google Docs, a web-based word processing and editing program that allows users to create, share and edit documents online as long as they have a link to the doc (Belomestnykh 2010). This
allows for multiple people to view, edit or comment on a single project and work simultaneously with people’s contributions or changes visible as they happen in real time. Each contributors’ work is also easily identifiable via a colour label and a name is attached to each person’s work. Every change is saved automatically in the Google Doc and there is a View History function that allows tracking of all contributions by time and author which makes it easy to see who contributed what elements and when.

As well as these technologies for written communication, there are many technologies that provide the opportunity to communicate through a combination of written word and images (such as Facebook Groups and Messenger). Facebook Groups function as a type of webpage that allows a member of the group to post items such as written messages, a weblink, an image, a GIF (moving image) or a video (Nations 2018). A person must have a Facebook account to join the group and to write or see posts or images. Posts to a group page appear in chronological order and will get bumped back up to the top of the group newsfeed as people comment on them. If a comment is made on a post, it is threaded underneath the post, so people know it is a reply to that post. This makes it easy to compile answers to questions or get feedback on ideas since all of the responses will be kept with the original post.

Similarly, Google Hangouts is a communication platform that enables written text chat and images however it also offers the opportunity to communicate even more interactively through audio calls and audio-visual video. Google Hangouts allow up to 10 people to participate in a simultaneous video call. Hangouts offers a chat window for text messages and a screen sharing function so that anyone in the video call can work on a document together (Chan et al. 2015).

Another visual messaging application is Snapchat which lets users exchange ‘temporary’ pictures and videos referred to as ‘snaps’. A user takes a picture and can customises the photo with a filter or add text, then select how long they want the image to be viewable for once it is sent (1-10 seconds). This means that once the receiver opens the Snap the image will only be viewable for a few seconds, although a person can take a screenshot to preserve it, (Alba 2012).

Research into the different use of these technology tools for communication in the virtual space have identified different views as to which to use in different circumstances. Some
writers claim that synchronous and visual information communication technologies (ICT) improves interaction, engagement and collaboration (for example Pienaar, Wu & Adams 2016; Canto, Jauregi & Van den Bergh 2013; Chan, Joshi, Lin, Mehta 2015). However, others identify some apprehension about relying on these tools for educational purposes given concerns about variable access to, and reliability of, internet connectivity, and recognition that there are differences in cultural preferences regarding choice and usage of ICT (Dutranti & de Almeida 2012). In addition, it is claimed that there are variable technology skills between people. Shachaf and Hara (2007) found that team members’ ability to use available media channels for specific tasks set boundaries on the choice of media. This was corroborated by Massey et al. (2007) who found that global, virtual team members must have, or urgently acquire, the necessary skills to communicate and collaborate on assigned tasks to avoid compromising outcomes. This has resulted in questions about the reliability and accessibility of communicating online (Pointdexter, Amtmann and Ferrarini 2011).

These variable findings suggest the need for further research into the ability of technology to facilitate intercultural communication and collaboration in the virtual environment. Such research should include how to choose the most appropriate technology to suit the particular form of global collaboration task as well as what skills are required for using the technology (Cagiltay et al. 2015; Daim et al. 2012).

Some research has been undertaken into the ability of a communication medium to reproduce the information sent without loss or distortion. This has resulted in recent emergence of Media Richness Theory (MRT) that aims to identify the most suitable media for reducing complexity in communication and collaboration. MRT explores the difference, for example, between digital communication such as email at one end of the spectrum, and video conferencing, at the other end. Klitmøller and Lauring (2013) drew on MRT to explore how lean media and rich media offer different benefits for knowledge sharing, socialisation and intercultural communication online. They found that, on the one hand, while rich media (such as video conferencing) offers more opportunities for understanding cultures and socialisation, it can also lead to stereotyping. On the other hand, lean media (such as email) reduces cultural cues but is more effective for routine low context tasks.

These findings confirm Das’s (2003) earlier research that choice of inappropriate technology can create obstacles. This was exampled by Fuller, Hardin and Scott (2007) who found that
effective information communication tools are vital to achieving assigned virtual team goals. Aiken, Gu and Wang (2013) also found that choosing suitable communication technology for a specific cohort of people and the specific environment is vital. These findings are important when considered against the findings of Zigurs and Buckland (1998) that the choice of technology can affect the performance of a group task. The Task Technology Fit (TTF) theory in Group Support System (GSS) environments that they developed has been used to study how groups can perform tasks more effectively and efficiently using different types of technology (Irick 2008). TTF for GSS identifies the need to explore different combinations of techniques, hardware and software to enhance group work. For this research TTF can be used as a means to identify techniques, software and hardware that can be used most effectively to support communication and collaboration in global virtual team. Indeed Montoya-Weiss et al. (2001) also argue that the suitability of the technology is especially important for members of a virtual team to adopt and use the technology that fits the task to be completed, performance and group effectiveness increases.

In addition to considering the right media technology for intercultural communication, global virtual team members also need to consider what Cagiltay, Bichelmeyer and Akili (2015) refer to as ‘the dialectic of culture and new technologies’ (p.12). Studies show that the cultural variations between the communicating parties in the virtual teams will affect the choice of types of media for knowledge sharing and communication (Klitmøller & Lauring 2013). For example, referring to Hofstede’s cultural types, Straub, Keil and Brenner (1997) argue that cultures that are characterised by low individualism (collectivistic culture) are not as comfortable using computer-mediated communication as the media can mute the group effect. Additionally, Shachaf and Hara (2007) found that if the team members are not socially close, informal media channels such as chat or hangouts may not be utilised. These slow acceptance rates or different usage preferences for certain kinds of technology between different cultures may result in failure of the project (Cagiltay, Bichelmeyer & Akilli 2015). Consequently, Duranti and de Almeida (2012) claim that priority must be given to consideration of different cultural communication styles when choosing ICT for effective global virtual teamwork.

What these findings suggest is that in order to develop student competencies for working effectively in global virtual teams, there is a need for consideration of not only the social and technical skills associated with intercultural communication and collaboration, but also the
knowledge of cultural differences that may affect choice of appropriate ICT tools for the task. The relevance of these findings from the literature, particularly those related to the stages and behaviours of group development and choice of technology fit for communication, to the purpose of this thesis are highlighted in the next chapter in which the four stages of group development and the theory of task technology fit are used to assist analysis of the research findings.

Given these findings, the second part of the chapter turns to what literature upon andragogy identifies about how to design learning opportunities to develop these competencies.

2.3 Part Two: The Education Challenge

In this second part of the literature review, research is presented into the design and use of authentic, experiential learning opportunities designed to develop student competencies for intercultural communication and collaboration, particularly as members of global virtual teams.

2.3.1 Educating for Intercultural Communication and Collaboration Competence

As was identified in the first part of this literature review, early approaches to intercultural communication training focused on developing individual understanding of behaviours required when assigned to work in different cultures. This training approach focused on a one-way delivery of knowledge about different cultural ‘norms’ to participants (students) by instructors. Bennett (1986) describes this approach not as intercultural training but as intercultural orientation as to the who, what, when and where of a culture and he claims that while it acquaints a trainee with knowledge for surviving, it does not provide them with the ability to adapt to a new cultural environment.

Developments in educational approaches over the years led to scholars advocating the use of a more active and participatory approach to learning, particularly appropriate when working with adults (see Kabuga 1977; Eitington 1984; Hoffman 1980). This led to a less one-way orientation approach towards a more two-way, inclusive learning approach that engages students more in their own learning. Bennett (1986) claims that an inclusive approach for intercultural learning takes a step beyond orientation by providing a learner with strategies to increase their effectiveness in an intercultural environment as well as reasons for why they need to be able to adjust. Using a more cognitive approach to learning requires an
experiential approach in which learners are engaged in experiences similar to those found in real-world situations. These enable them to experience, and experiment, with different ways to address a new situation (Mestenhausser 1981) such as conducting intercultural communication in a global environment using digital technologies.

Research into the need for education designed to develop graduates with international perspectives began appearing in the early 1980s. This coincided with a recognition that students were becoming citizens of a global era in human history (Anderson 1979). This required educational institutions to ensure students graduated with the knowledge and skills to live and work in a globalised world (Goren & Yemini 2017). The new foci on teaching international perspectives were variably termed: global education (Hicks 2003), global citizenship education (Davies, Fidler & Gorbis 2010), international education, global learning, a global dimension and Internationalisation of the Curriculum (Knight 2015). The latter term was defined as a strategy to ‘integrate an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education’ (Knight 2015 p.72), and was embedded into the internationalisation strategies of many universities, particularly in Australia (Rizvi & Wals 1998). The common educational goal of such internationalisation strategies was to improve students’ intercultural competence, which prompted discussion around what constitutes such competence (Yershova, DeJaeghere & Mestenhausser 2000; Prechtl & Lund 2008).

Ruben (1976), a behavioural psychologist, conceptualised intercultural competence as knowing how to behave in intercultural situations, identifying seven dimensions of intercultural competence based on behaviours. Spitzberg and Cupach (1984) also focused on behaviour with their description of intercultural competence as having an ability to communicate effectively and appropriately with people from different cultural backgrounds. Byram (1997) theorised on intercultural competence from an intercultural communication perspective due to his expertise in foreign language education. As a result, Byram’s (1997) model of intercultural competence focuses on communication and comprises of intercultural attitudes of curiosity and openness; knowledge of social processes and interactions; skills of interpreting and relating events and documents from one culture to another; skills of discovery and interaction including the ability to use intercultural knowledge and skills in cross-cultural interactions; and critical cultural awareness of one’s own culture and other cultures.
More recently, Deardorff’s (2006) study of students’ intercultural competence produced a definition of intercultural competence as ‘one’s ability to communicate effectively and appropriately in intercultural situations based on one’s intercultural knowledge, skills, and attitudes’ (p. 248) as well as a pyramid model that shows that intercultural competence is a developmental process. This focus on graduate development of intercultural competence led Rae Baker and McNicol (2011) to identify an interculturally competent student in the 21st century as one that had knowledge and curiosity about the world plus language and intercultural skills to communicate effectively with people from other countries and cultures. Dill (2013) added a humanistic perspective to this definition by stating that there are two main goals for developing intercultural competence of graduates, to provide students with the skills to work in a globalised business world, and to provide students with a global orientation, empathy, and cultural sensitivity that is based on humanistic values.

These research findings led to the embedding of developing international perspectives into graduate learning which were initially led by creating ‘learning abroad’ opportunities such as service learning, student exchange and international internships (Gribble & Tran 2016). However, over time a broader range of learning opportunities were developed including a range of Australian national projects funded to design and develop resources and ideas for internationalising the curriculum. These empirical projects included embedding intercultural competence in business education (Freeman et al. 2009); developing teaching guides for good practice in learning and teaching across cultures (Leask & Murray 2015); designing programs for graduate teachers to learn from a classroom of many cultures (Downey et al. 2016); designing models to develop student global perspectives through community based service-learning experiences (Halbert et al. 2016); developing processes to enhance outcomes from mobility experiences (Gray 2016); and connecting inbound international students with outbound domestic students (McLaughlin et al. 2016). Underpinning these initiatives was a focus on situating students in travel abroad and designing resources for experiential learning.

There is much evidence in the literature that ‘experiential methods are ideal for learning about intercultural communication precisely because culture is experienced’ (Cheney 2001, p.91). Heywerd (2002) found that intercultural learning takes place through the experience of putting oneself in a cross-cultural situation. A. Kayes, D. Kayes and Yamazaki (2005) identified that intercultural communication skills are developed by going through the process
required to manage complex, ambiguous and often stressful intercultural interactions. What these research studies suggest is that learning design for intercultural competence needs to go beyond theory to actively, and authentically, place students in experiential learning opportunities. This conclusion supports Placer and Dodds’ (1988) claim that in order to develop cultural understanding, ‘you have to know, do, or feel certain qualities usually before successful outcomes occur’ (p. 173). It is also in line with claims from Mestenhauser (1981) and Bennett (1996) that students need a learner-centred, experiential learning environment for effective intercultural training, which is supported further by an earlier argument by Fox (2003) who claimed that cultural competency training must engage the whole person in terms of knowing, being, and doing. Osland and Bird (2013) went even further to emphasise that experiential learning approaches offer the greatest transformative potential needed to fully develop global competence.

While each of these scholarly writings, as well as the empirical projects, emphasise the importance of experiential learning, most of these ideas are primarily focused on practitioners in a face to face learning environment. Developing students’ skills through experiential learning opportunities that are designed to mirror the real world before they are introduced to the high-stakes of working in global teams in the virtual environment requires a different approach to teaching (Brewer et al. 2015). Indeed, when the first literature review for this research was undertaken in 2015, despite some reference to the need for students of business studies to develop skills to operate in global virtual teams (for example Reiimers 2009; Davies, Fidler & Gorbis. 2013; St. Amant 2002; Sorrells 2012) there was only one major study that sought to connect experiential learning and global virtual team-based education (Taras et al. 2013). That study found that placing students in global virtual student teams to complete a work project delivered an experiential dimension that allowed them to obtain first-hand experience in the technical and cross-cultural aspects of international and virtual collaboration. However, the authors identified the need for further research to understand what specific elements and facilitation techniques were most effective when employing experiential learning for educating students to work in global virtual teams.

While many of these initiatives contributed to the concept of internationalising the curriculum (Poindexter et al. 2011; Çiftçi, 2016; Commander et al. 2016), the growth of global, virtual teams led to the need for further exploration of learning opportunities using the virtual environment. These factors require not only an understanding of the new media
ecology and technology that connects business (Davies Fidler & Gorbis 2011), but also the educational design of new learning opportunities for students that incorporate the characteristics of authentic and experiential learning. Consequently, it was understood that educators needed to design new learning opportunities for developing competencies for working in global virtual teams in order to ensure future employees have these competencies (Coryell, Spencer & Sehin 2014).

2.3.2 Educating for Global Learning in the Virtual Environment

Literature focused on how to use the virtual environment to deliver global education through a computer interface commenced in the early years of the 21st century. Early researchers such as Popovich and Neel (2005) and Ally (2004) explored how the internet could be used to deliver learning materials and provide interactions between learners. This was achieved by placing cultural scenarios, case studies and theory in the virtual environment for students to access (Erez et al. 2013). However, over time this learning approach has been criticised for being didactic, concerned more with learning structures and processes rather than actively engaging students (Arbaugh 2002). Dineen (2005) explains that the focus of research into what was then termed ‘online’ learning was more about understanding how an online international learning class should be structured and considering whether virtual team training can assist with global virtual team performance. Other researchers, such as Lawless and Allan (2003), were focused on identifying levels of stress experienced by students undertaking online collaborative work. It is thus not surprising that these early approaches to the delivery of online intercultural learning were criticised for their lack of student interactions or experimentation (Clark & Gibb, 2006; Pless, Maak & Stahl, 2011) as they followed a more didactic model that did not require students to interact or collaborate in a more experiential way.

This criticism began to be addressed by a move to design intercultural learning experiences in accordance with more engaging student participation. O’Dowd (2007) presents an example taken by the foreign language discipline in Europe in the early 2000s, where online learning experiments were designed to engage students from different countries to exchange information, share ideas and work collaboratively via e-mail, synchronous chat and threaded discussion forums. Da Silva (2013) presents the example of multicultural partnerships between students in secondary schools from the Czech Republic, Italy, Poland and Portugal.
to enhance intercultural communication competence through a learning project titled ‘Learning from One Another’ (LOA).

In the past decade, interest in using the virtual environment for learning experiences has expanded beyond intercultural learning into all fields of learning due to an increase in number and spread of courses offered ‘online’. The growth of these courses, which have varying degrees of fully online, blended or face-to-face learning engagement, has prompted a need for exploration of andragogy as it specifically applies to the virtual environment. Downing and Herrington (2013) have begun to address this need through their description of a set of design principles for applied learning in higher education that are designed to deliver more engaging learning in fully online courses. These principles bring together elements of applied learning, authentic learning, realistic teacher education, situated learning and reflective practice with the aim of engaging and retaining online students (Downing & Herrington 2013).

Other examples of learning experiences designed in accordance with the characteristics of authentic and elements of experiential learning, have been through the use of simulation, virtual reality, and online role play to develop student understanding of cultural interactions (Gannon & Poon 1997). Simulation and role play have been used to educate business graduates to deal with the complexity and ambiguity of real-life business issues using Virtual Simulated Learning Environments (VSLE). Jones (2007) used VSLE’s to underpin learning in management and negotiations by providing real-world negotiation opportunities in a safe learning environment. Role play has also been used for intercultural education including the engagement of international and local students in intercultural role play to understand behaviours required for successful intercultural encounters in foreign countries (Valentine & Cheney 2001) as well as in teacher training where simulated real-life encounters were used to highlight cross-cultural communication issues and policy (Linser & Fabusi 2008).

Virtual reality has similarly been applied to improve intercultural understanding through the use of simulated foreign environments. Lane (2007) used virtual reality and photoreal 3D graphics to provide learners with a sense of what it might be like to be immersed in a foreign environment, while Diehl and Prins (2008) situated the learner in the popular Second Life online 3-D virtual environment and provided opportunities for cross-cultural exchange to enhance intercultural literacy.
While these new approaches to learning in the virtual environment for delivery of courses are valuable and indicate areas worth exploring, they have not addressed the need to understand the learning design required for the development of global virtual team skills. There has however, been recent interest in how experiential learning opportunities can assist with providing a useful framework for authentic intercultural learning experiences in the virtual environment (Zetinig, Mockaitis & Zander 2015; Magnier-Watanabe et al. 2017 and Taras & Ordeñana 2015). These studies, which focus on collaborative online learning for students, identify that as well as the learning environment being authentic, there is also a need to provide students with experiential learning opportunities that develop skills to communicate and collaborate effectively in global virtual teams (Brewer et al. 2015). However, despite efforts to provide learning opportunities that engage students in authentic, experiential learning and development of their skills for intercultural communication, none address the need for broader competencies in international communication and collaboration required for global virtual (multicultural) teams (Reimers 2013; Brewer et al. 2015).

### 2.3.3 Educating for Competencies for Members of Global Virtual Teams

Recognition of the need to develop students’ competencies for the global, virtual environment (Reimers 2013; Taras et. al 2013) led to experimentation in learning design under the heading of globally networked learning environments. Bégin-Caouette (2013) claims that globally networked learning environments enable students to use technology to experience the authenticity of working with peers in different geographical locations. These environments aim to increase student understanding of how intercultural communication occurs in global virtual teams. He further explains these globally networked learning environments provide more students with the opportunity to experience authentic work environments, making them more accessible and thus more equitable.

Examples where students were engaged directly in communicating and collaborating with other cultures and provided with opportunities for social and interactive learning as an introduction to the technical aspects of international and virtual collaboration are provided by Taras et al. (2013). One example is the Collaborative Online International Learning (COIL) model developed by the State University New York (SUNY) COIL centre. This model encourages students to collaborate online in an experiential cross-cultural learning.
opportunity. Another example is the X-Culture Project (Taras et al. 2013) which engages students in a global virtual team (case study) business project.

Both Brewer et al. (2015) and Zettinig et al. (2015) found that the complexity of the virtual, multicultural and multi-temporal environment in which global virtual teams operate, provides a challenging experience within a setting where deep learning can occur that is transferable to new and future work contexts. Brewer et al. (2015) concluded the further need for experiential learning to take place in an authentic setting. Others, including (Gonzales-Perez et al., 2014; Jimenez, et al. 2017 and Magnier-Watanabe et al. 2015), identified the opportunity for online experiential exercises to develop virtual collaboration skills. Gonzales-Perez et al. (2014) found that learning how to work in global virtual teams requires students to experience, first hand, the complexities of interacting across cultures, technology and time. Similarly, Jimenez et al. (2017) in their study of the key characteristics and dynamics underlying global virtual teams found that inquiry-based learning was the most effective pedagogy for educating students about the workings of global virtual teams. Magnier-Watanabe et al. (2017) endorsed experiential learning opportunities for global virtual team education as it allows students to experience and solve typical challenges that global teams encounter.

However, Kirschner, Sweller and Clark (2007) have questioned the ability of what they termed ‘minimally-guided instructional learning approaches’ such as inquiry learning, experiential learning and discovery learning, for developing cognitive learning. Their study of the literature of such approaches found that strong instructional guidance rather than constructivist-based minimal guidance was more effective. They went one step further to claim that minimally-guided approaches may have resulted in students acquiring incomplete or disorganised knowledge.

Application of what Biggs’ (1996) termed ‘constructive alignment’ through which there is a clear alignment between learning aim, learning process and learning assessment, requires constructivist based learning to be designed so there is clear acknowledgment of the level of performance required to meet curriculum objectives; the need for learning contexts that stimulate required students’ performance; and assessment designed to address curriculum expectations. Apart from McLoughlin’s (2001) study into how to apply constructive alignment principles to intercultural learning, there is a dearth of literature relating these
principles to cross-cultural online learning. Recent studies have focused more on the macro issue of the value of experiential learning for educating students in preparation for global virtual teamwork, than on the micro issues of how to apply these principles to facilitate an appropriate learning design. Matsuo (2015) did identify factors required for activating experiential learning in general, but not as it related to skills for global virtual teamwork. He also found that presenting students with challenging experiences forces them to acquire new skills and knowledge. Additionally, Magnier-Watanabe et al. (2017) found that setting individual learning goals is important for managing global virtual teamwork, while Kitmoller et al. (2015) found that socialising is an essential prerequisite for building trust and team-effectiveness. This need for socialising confirms the finding of Taras et al. (2013) that the level of enjoyment students experienced while collaborating in their global virtual teams led to improved knowledge and understanding. It also confirms Matsuo’s (2015) finding that enjoyment of work is an activator of experiential learning, which is a more recent example of Hennessey and Amabile’s (1998) earlier claim that people will be most creative when they are motivated by the interest, enjoyment, satisfaction, and challenge of the work itself.

Together this emergent literature presents examples of how experiential and authentic learning opportunities can assist to develop student competencies for communicating and collaborating effectively in global virtual teams in the following ways. Brewer et al. (2015) state that students must be able to experience and solve typical challenges that global teams encounter. They identify that realistic work projects enable students to not only experience what it is like to work in a virtual team, with people from different backgrounds to achieve different task goals, but also engages them in a work experience they may encounter in the future. Their findings support the second element of the authentic learning framework identified by Herrington and Oliver (2000), namely ‘that usable knowledge is best gained in a learning environment that engages learners in authentic (global virtual team) activities’.

Coryell, Spencer and Sehin (2014) claim cross-cultural learning needs to be grounded in actual cultural interactions. Barber, King and Buchanan (2015) identify that the learning environment needs to be authentic to provide a clear purpose for learning in global virtual teams.

Poór et al. (2018) go one step further and suggest that it is not possible to simulate a multicultural global virtual team environment in the classroom and that real international virtual teams need to be employed as experiential learning vehicles for real global virtual
work skills to transpire. Their research supports the first element of Herrington and Oliver’s (2000) authentic learning framework which is ‘that usable knowledge is best gained in a learning environment that provides authentic contexts that reflect the way knowledge will be used in real life.’

A valuable counterpoint is provided by Elmes’ finding (2018) that the shadow dynamics of experiential learning may be exposed where unexpected, distorted and sometimes destructive behaviour is ingrained in subconscious emotions and defence mechanisms. This last claim supports Bradford’s (2018) emphasis on the importance of considering the potential negative, or ‘shadow-side’, of any experiential learning opportunities to minimise anxiety and disengagement so students feel they can experiment safely and learn from mistakes in a supported learning environment.

Further research by Järvelä et al. (2016) identified the importance of Herrington and Oliver’s (2000) fifth element of the authentic learning framework, ‘that usable knowledge is best gained in a learning environment that supports collaborative construction of knowledge’ for developing successful collaborative learning in virtual environments that requires both task and group-related interaction. Finally, Könings et al.’s (2018) research supports Herrington and Oliver’s (2000) eighth element of the authentic learning framework, ‘that usable knowledge is best gained in a learning environment that provides coaching and scaffolding by the teacher at critical times’ by demonstrating how the teacher can provide knowledge at critical times so students can progress with global virtual team work.

2.3.4 Summary

In summary, there is evidence in the literature that a combination of elements required for authentic learning and characteristics of the cycles of experiential learning is important to underpin the cognitive learning needed to develop competencies for communicating and collaborating effectively in global virtual teams. It has also been shown that experiential learning opportunities provide students with a holistic opportunity to think, feel, perceive, and behave while interacting with other persons and the environment (Ng Van Dyne & Ang 2009). Accordingly, experiential learning opportunities that address authentic issues whilst highlighting the complexity of communicating and collaborating in global virtual teams where members are exposed, and required to manage a multitude of demands and cues from
other members, as well as from multiple educators, are necessary to replicate operating in a complex, multi-faceted environment.

However, the literature review also raises several key issues associated with educating students with competencies to enable them to communicate and collaborate effectively in global virtual teams. Issues identified include: how to develop understanding of cultural differences, how to develop skills for intercultural communication and collaboration, what technology to use, how to develop skills for experiential and authentic learning engagement (including time and project management skills), and what educational strategies and learning design, is most appropriate. Of particular note, is the need to place importance on the learning design of authentic, experiential learning opportunities for students to develop competencies required for communicating and collaborating effectively in global virtual teams. Particularly important is the need to pay greater attention to the principles of constructive alignment such that learning aim, learning process and learning assessment are clearly aligned.

The literature review therefore indicates that there is a lack of focus on the mechanics of what is needed in learning designed to develop students with these competencies. In particular, the role of the educator in experiential learning applied in a global, virtual environment is virtually absent. This is an interesting factor given the recognition by several authors that communicating across cultures using technology can be a difficult task that requires an understanding of the advantages and limitations of technology; how to build relationships across the virtual space and how to develop cultural understanding using technology to bridge the virtual space (Grosse 2002, Crossman & Clarke 2011; Taras et al. 2013).

Despite all of this research on authentic, experiential learning for acquiring intercultural work skills, the literature on how the virtual environment can be harnessed to develop these skills is only just emerging. Most notably, there is relative silence on who should design the learning activities, how these activities are constructively aligned to learning goals and how the learning should be scaffolded for managing the complexities of communicating and collaborating in a digital, multicultural and multi-temporal, environment. These factors have set the purpose for the current research, namely to extend experiential learning theory into the digital environment and contribute to new theory surrounding how learning of intercultural business skills for operating in global virtual teams is acquired. Having established the literature foundation for this research study into what challenges are presented and what
changes are needed to adapt experiential learning design to develop students’ competencies to communicate interculturally and collaborate effectively in global virtual teams, the next chapter turns to the research design.
Chapter Three: Research Methodology

3.1 Introduction

The review of literature dealing with the challenges and changes for the business sector revealed a growing body of interest in competencies needed for communicating and collaborating in a global business world, especially those needed when working in global virtual teams. Literature written from an educational perspective identified the need for research into what challenges are presented when adapting andragogy to situations associated with authentic and experiential learning opportunities in the virtual environment. This chapter presents the methodological approach adopted for this research. It begins with the relationship between the orientation of the researcher epistemology, theoretical perspective, methodology and research methods, before presenting an overview of the research design, data collection methods and analysis.

3.2 Research Question

The research question, confirmed by the identified gap in the literature review is: *what challenges are presented, and changes required, to adapt authentic, experiential learning opportunities to the virtual environment in order to develop students’ competencies to communicate interculturally and collaborate effectively in global virtual teams?*

3.3 Research Ontology and Epistemology

Given that the research was located in the largely unexplored conjunction of the business and education environment, the author chose to undertake exploration from a social constructivist epistemology that rests on the assumption that, ‘the world is socially constructed and made up of many realities’ (Crotty 1998, p.42). In taking this approach the researcher acknowledged the claim by Guba and Lincoln (2004) that there can be no objective reality or single version of truth. Given her experience in designing learning programs for business graduates, the researcher had developed a basic set of beliefs that helped guide action for research and practice, similar to those outlined by Guba (1990).

As suggested by Crotty (1998) this belief framework was used to clarify elements of the research design, including the kind of evidence to be gathered, from where it was sourced,
and the intention of the interpretation. The social constructivist leanings of the researcher led to the choice of a case study of an authentic, experiential learning opportunity. This enabled the researcher to adopt an interpretivist perspective in accordance with Crotty’s (1998) claim that in a context that is too complex to be reduced to a set of rules or laws, an interpretive study places emphasis on experience and interpretation rather than statistics. Interpretivism is explained by Greene (1990) as seeking ‘to explore peoples’ experiences and their views or perspectives of these experiences’ (p.5). Schwandt (1994) also suggests that interpretivism enables an understanding of lived experiences from the point of view of those who live it day to day. A similar approach to the interpretivist paradigm has been adopted by other complex social studies that are similarly focused on identifying social processes that contribute to online collaboration (Anderson 2013) and investigate the motivations and values of participants in an intercultural study (Myers 2013). Thus, for the purposes of this research, an interpretivist approach was considered a suitable lens as it allowed the author to focus on the experiences of the participants as they communicated and collaborated as members of global virtual teams. To assist this interpretivist perspective, the researcher used a number of existing frameworks to help analyse the findings.

3.4 Research Design

In accordance with Strauss and Corbin’s (1998) claim that ‘qualitative research is suitable when trying to understand the meaning or nature of a person’s experience and what they are doing and thinking’ (p.11), and Matveev’s (2002) supposition that ‘qualitative research can supply a greater depth of information about the nature of the learning process’ (p.59), a qualitative approach was adopted in this study. A similar qualitative approach was adopted by recently emergent studies on the development of intercultural business communication (Taras et al. 2014; Brewer 2015; Daim 2011).

A case study methodology employing interviews and documentation, with a thematic approach to data analysis in four stages was utilised. The first two stages used pre-set coding using the elements of authentic learning and characteristics of cycles of experiential learning. The third stage used pre-set coding based on a conjunction of identified intercultural competencies and levels of cognitive development. The fourth stage used open coding to further identify themes that emerged from the first three pre-set coding findings.
3.4.1 Methodology

A case study methodology was chosen given the emergent nature of the question under analysis. Case study methodology is used extensively in medical and social worker fields (Hammersely & Gomm 2002) to document medical situations. Case study has also been used in education studies means to develop and test pedagogical strategies (Lambert 2015) and in business management as an approach to solving practical problems (Perry 1998).

An important issue under analysis by this study focuses on how best to ensure students develop the necessary competencies to communicate and collaborate effectively in global virtual teams that are situated in different temporal locations and time zones. The approach chosen is in accord with Yin’s (1984) suggestion that case-study systems should be designed ‘for investigating a contemporary phenomenon within its real-life context’ (p. 23), together with his claim that case study research is the preferred strategy when questions are being posed (Yin 1981). As well as providing the opportunity for a deeper understanding of how individuals make sense of, and interact in, their social and organisational worlds, an investigative case study approach allows for deep probing into how students learn in the virtual learning environment (Denzin & Lincoln 2011). Further, a case study methodology provides the opportunity to collect personal experiences and understand participants’ views, which calls for ‘deeper investigation of some bounded entity’ (Quinlan 2011 p.182) and enables the use of an experiential approach. Thus, this study’s choice of a case study methodology was symbiotic with the research question.

The case study selected was part of a global business project designed and implemented in 2016 by academics at a large university in Australia. Termed a Global Virtual Work Integrated Learning (GVWIL) project, the study involved the lived experience of a group of students from three cultural and temporal locations (Australia, USA and Ireland). In all, 90 students participated in the GVWIL project with students evenly spread between the three locations. Academics in each of the three locations agreed to engage their students in the GVWIL project with the aim of developing intercultural communication and collaborative skills of students. However, responsibility for the design rested with academics in Australia, with each educator in the different locations assuming separate responsibility for how this learning activity was scaffolded into their separate subjects (courses) and how the students for which they were responsible were supported and coached through the project. The authentic task that underpinned the learning experience was sourced from an Australian
based organisation, although it had global implications. Students were formed into ten global virtual teams, each with approximately nine students, again evenly spread across locations. Each global virtual team worked collaboratively on developing a response to an industry-identified problem. Thus, for the purpose of this research, the GVWIL was considered appropriate as a case study, primarily as it was designed using the four stages of the experiential learning cycle, and the nine elements of instructional design framework (explained further below). The study’s suitability for inclusion in this paper is further enhanced by its focus on identifying levels of intercultural competencies skills acquisition.

The common authentic, experiential learning task that the GVWIL project was designed to engage students in was a real (authentic) business challenge that had global implications faced by a business partner (client) located in Australia. The client was to provide expert knowledge at the commencement of the project and be available during the learning experience. Students were to participate as members of global virtual teams that reflect the way knowledge is shared in contemporary global business. Students were then required to share their particular cultural knowledge with other members of the global virtual team. These steps provided multiple roles and perspectives and required the collaborative construction of knowledge.

Students were required to reflect on, and make observations about, the culturally specific information provided by each member of their global virtual team and of their collaborative interactions. These steps were designed to enable abstractions and conceptualisations to be formed from the cultural information communicated that could then be used to prepare a final report (presented in a face to face meeting with the client). In addition, students were required to think about their interactions in the global virtual teams to assist them to make tacit knowledge explicit and improve collaboration. Finally, students, with the support when requested of teachers, were encouraged to engage in active experimentation with what they were learning and make adjustments to the client report and presentation they were preparing. The client report formed the authentic assessment for the project. These requirements provided a learning opportunity that included the characteristics of the Kolb’s (1965) cycles of experiential learning and elements of Herrington and Oliver’s (2000) authentic learning for online environments, as evidenced in Table 2.
<table>
<thead>
<tr>
<th>Experiential learning cycle (Kolb 1965)</th>
<th>Authentic learning instructional design elements (Herrington &amp; Oliver 2000)</th>
<th>Case study learning project design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle 1: Concrete (real) experience</td>
<td>1. Reflects the way knowledge is used in real life</td>
<td>Students in global virtual teams (three geographically dispersed, multi-temporal, multi-cultural, locations)</td>
</tr>
<tr>
<td></td>
<td>2. Provides authentic activities</td>
<td>Client brief from industry partner requires a globally-informed solution to be presented back to the client</td>
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<td></td>
<td>3. Presents access to experts and modelling of processes</td>
<td>Client available for consultation</td>
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<td></td>
<td>4. Provides multiple roles and perspectives</td>
<td>Students access learners from different disciplines and countries with different processes</td>
</tr>
<tr>
<td>Cycle 2: Reflection and Observation</td>
<td>5. Supports the collaborative construction of knowledge</td>
<td>Students communicate and collaborate to prepare report for client</td>
</tr>
<tr>
<td></td>
<td>6. Promotes reflection to enable abstractions to be formed</td>
<td>Students reflect on specific and shared cultural information, and abstract relevance for client brief Students keep reflective learning journals</td>
</tr>
<tr>
<td>Cycle 3: Abstraction and Conceptualisation</td>
<td>7. Promotes articulation to enable tacit knowledge to be made explicit</td>
<td>Students observe interactions in global virtual teams and take action to improve collaboration</td>
</tr>
<tr>
<td>Cycle 4: Active Experimentation</td>
<td>8. Provides coaching and scaffolding by the teacher at critical times</td>
<td>Teachers provide support when required</td>
</tr>
<tr>
<td></td>
<td>9. Provides for authentic assessment within the task</td>
<td>Final report presentation to client</td>
</tr>
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</table>

Table 2  Elements of authentic learning (Herrington & Oliver 2000) and experiential learning cycles (Kolb 1965) in the design of the GVWIL project

The GVWIL project was designed to develop the intercultural competencies of students. To enable the success of this objective to be assessed, the seven intercultural competencies made up of attitudes, skills and behaviours, identified by Kühlmann and Stahl (1996) as critical to success in international work assignments, were adopted as measures within this study. These competencies include; tolerance for ambiguity, behavioural flexibility, goal orientation, sociability and interest in other people, empathy, non-judgementalness and meta-communication skills. Descriptors of these intercultural behaviours, attitudes and skills from Kühlmann and Stahl’s (1996) study were used to guide the coding of participants reflections and interview responses. While it was recognised that these competencies relate to what is required for conducting successful face to face business in an actual geographical location rather than virtually in global virtual teams, they were judged as relevant indicators of what is required for students to conduct intercultural communication and collaboration in general.
As a complement to this analysis, these intercultural competencies were mapped against the six levels of Bloom’s Taxonomy (1956), facilitating identification of cognitive progression through levels of: knowledge, comprehension, application, analysis, evaluation or synthesis of each competence (See Appendix A). This operation then enabled assessment of whether students had moved along a continuum from simple to complex, concrete and abstract knowledge.

3.4.2 Research Parameters

In order to separate the GVWIL learning project from the research case study, a number of research parameters were established. First, not all students engaged in the GVWIL project were recruited as participants in the research. Instead, participants were invited to participate, using a non-probability, purposive sampling technique, in accordance with Mays and Pope’s (1995) focus on identifying ‘a specific group of people with the characteristics and circumstances relevant to the case’ (p110). The purpose of this was to restrict involvement in the study to ‘informants’ with the ability to obtain or retrieve important information. While the selective nature of this non-probability sampling meant that there was an element of subjective judgement that rendered the sample not truly representative of the population (Quinlan 2011), it was decided that this was acceptable given that the researcher did not intend to extrapolate from the sample for an entire population, but rather to regard the findings as tentative generalisations (Bouma & Ling 2004).

This resulted in a specific sample of 30 Australian-based students from the original total of 90 students across the three countries being eligible for participation. The criteria used for determining the eligibility of participation in this research included that the participants were students involved in the GVWIL project. Furthermore, they needed to be part of the Australian student cohort engaged in the learning project, as the other students from the other two countries also partaking in the GVWIL project had different instruction and curriculum which meant that their experience did not meet all the criteria of an authentic and experiential process.

All 30 of the Australian based students were invited to be part of the research, with a clear distinction being made between their (student) engagement in the learning project and their participation in the research project. The researcher did not teach or tutor the students undertaking the GVWIL project, so all research was able to be conducted entirely separately.
from the classroom work. The 30 eligible participants were spread across all 10 global virtual teams participating in the research project. This resulted in the research project meeting Quinlan’s (2011) identification of the need to provide participants with the ability to inform and contribute to the research. A rigorous ethics approval process was undertaken to ensure clear separation between the learning project and the research, with ethics approval granted through the RMIT university Human Research Ethics Committee.

Of the 30 eligible participants, 16 agreed to participate in the research. This provided a sampling ratio of 53%, which is 13% above the 30% identified by Neuman (2009) as required for small populations. It also provided an, albeit small, but representative participation across all global virtual teams enabling a cross section of responses to be used to address the research question. By default, rather than design, as neither gender nor age was an issue for either the project or the research, the gender split among participants was six males and 10 females, with an age range from 19 to 28 years. This was similar to the gender and age range of students in the learning project.

Whilst the sample was small, it fits within the parameters of the number of participants Starks and Brown Trinidad (2007) identify as typical for qualitative studies’ sample sizes, which they claim can range from 10 to 60 persons. The sample size is also similar to other research studies that have explored intercultural collaborations between small samples of students (Lee 2009; Pienaar, Wu & Adams 2015). According to Starks & Brown Trinidad 2007; Curtis et al. 2000, small sample are able to provide the opportunity to generate rich data sets. Schultze and Avital (2011), claim ‘rich data is obtained from thick description, thick interpretation and thick meaning’ (p.3) and is able to disclose deep knowledge of the situation under investigation (Brekus, Galliher & Gubrium. 2005).

However, the researcher also recognised that the small sample size placed some limitations on the study. These include that probabilistic assumptions could not produce meaningful results arising from multivariate sets of causes (Lieberson & Lynn 2002). Additionally, a small sample size risks the possibility that not enough data will have been collected to clarify relationships between conceptual categories and to identify variations in processes (Charmaz 2006). Nevertheless, the author of this paper adopted Saint-Georges’ (2018) claim that “the charge that generalizations are difficult to produce when doing case studies only holds if we have a rather numerical and nomothetic/law seeking model of science” (p.97).
3.4.3 Research Methods

Two data collection methods were used. This included interviews with, and written reflections of, participants in response to a series of ‘trigger’ questions. Both sets of questions were developed independently of the GVWIL Project assessment. This ensured that the distinction between the student learning project and the research was maintained. The two chosen data collection methods correspond with two of the main sources of evidence required for case studies identified by Yin (2003), as confirmed by Quinlan (2011) and Ng and Coakes (2014).

The reliability of the research was assured by cross-checking and validating data from the two sources, following similar processes used in research studies by Flick (2004), Hughes et al. 1997 and Perlesz and Lindsay (2003). Another benefit of employing these methods was the avoidance of a problem identified by Brink (1993) and Bernard and Ryan (2003), where participant responses could be based in a desire to please, or based in individual emotional issues, principles, and viewpoints.

This data collection methodology also provided several other benefits for the research. Having multiple data sources allowed for the use of ‘between method triangulation’ described by Quinlan (2011) as providing a broader and potentially more valid view of the phenomena being researched. This allowed the production of clearer patterns and answers to help address any bias (Anderson 2013), thus helping to address issues of validity and reliability.

In this research, the participants’ reflective journals also permitted the researcher to gain insights into participants’ perceptions of their own lived experience which was then cross referenced with their responses in the interviews.

The first data collection method comprised of two interviews. Qualitative interviews involve a data collection method usually associated with case studies (Dul & Hak 2007; Anderson 2010). They provide the opportunity to gather details on the participants’ personal experience of the case under investigation (Quinlan 2011). The interviews used a semi-structured, one to one format, that included both structured and open-ended questions. The one to one format was chosen as it provided an opportunity for the researcher to develop a rapport with the
participant and probe responses for more detail. This format met Quinlan’s (2011) requirement for encouraging open and honest communication between the interviewer and interviewees. The semi-structured format also allowed a combination of open-ended and structured questions to be asked; assisted the definition of themes to be explored; and allowed flexibility to pursue a divergence response (Gill et al. 2008). As suggested by Patton (2002), an interview guide was created to ensure there was consistency in the discussion and collection of data from each interviewee.

As timing was an important element in the data collection, given the necessity of capturing participants’ experiences as they progressed through the 12-week experiential learning opportunity, interviews were held at two time periods, the commencement, and the end, of the GVWIL project. Collection of data over time has been shown to be effective for identifying where and when participants skills develop (Gill et al. 2008). A comprehensive picture of the participants’ learning experience was built through interviews and reflections throughout the project.

Interview A was conducted at the start of the GVWIL project. This asked structured questions related to the demographic and psychographic aspects that may affect students’ engagement in, and learning from, the authentic and experiential global, virtual learning opportunity. The interview also included questions concerning nationality, languages spoken, travel experiences and multicultural work experiences (see Appendix B). These questions were asked in the light of findings from earlier studies of intercultural competency that there can be contributing factors, such as gender, age, religion, ethnicity and exposure to previous intercultural experiences through study, travel, families or friendships (Williams 2005), that can influence an individual’s ability to develop intercultural competency.

Interview B was conducted at the conclusion of the GVWIL project. It asked open-ended questions aimed at gaining an understanding of participants’ experiences of the learning opportunity (see Appendix C). These questions were designed to identify what participants found important in the learning design that assisted communication and collaboration between members of the global virtual teams; together with what participants perceived as the contribution of the experiential learning design for developing the competencies they needed for communicating and collaborating as members of global virtual teams (Q1, Q2, Q3, Q4). Students were asked a final question which sought to identify to what extent the
authentic learning environment, exemplified by preparing a response to an industry client brief, contributed to their development of intercultural competencies (Q5). Responses to these questions were coded to enable themes to be identified in the data analysis stage.

The second data collection method involved gathering participants’ written self-reflections on their experiences with the learning opportunity. Students were encouraged to record their written reflections throughout the learning experience particularly at the beginning, middle and end of the learning opportunity. These reflections occurred separately to the formal assessment, and thus accorded with what (Golafshani 2003) described as improving the validity of documentation.

The semi-structured reflections asked participants to reflect on why they decided to take part in the learning project, what challenges they had faced, how this form of learning engagement had shaped their learning, what they had learnt from their learning engagement and how they perceived this engagement might help in their future career. Participants were also advised to use the Discover, Interpret, Evaluate and Plan (DIEP) approach for their reflections (Boud, Keogh & Walker 2013). This data collection technique enabled ‘thick description’ of the participant experience of the learning opportunity (Nastasi & Schensul 2005). At the end of the project, students were asked to deposit their reflections in the learning management system. After retrieval and before analysis, all data was de-identified to ensure the integrity of the research.

3.4.4 Data Analysis
The combination of these two data collection methods provided a range of data for analysis and triangulation of evidence. This provided a validation for the more subjective data collection process, in accord with Yin’s (2003) recommendation of having multiple data collection techniques as part of the research process to improve reliability.

In keeping with the earlier identified requirements of case study research, some authors suggest that data analysis needs to include a thick, rich and complete account of the phenomena under investigation (Geertz 1973). For this to be achieved, an inductive analytical approach was used to examine and consider how the learning took place. Creswell (2009) describes data analysis as ‘making sense out of text and image data’ (p. 183). Johnson and Christensen (2010) describe data analysis as an ongoing and iterative process in qualitative research. Given that the analytical objective of this study was to understand what challenges
might exist, and what changes were needed to adapt authentic, experiential learning opportunities to develop students’ competencies to work effectively in global virtual teams, a flexible analytical method was required that was inclusive of the rich and detailed data collected. In this case, data analysis helped to uncover the meaning, develop an understanding, and discover insights relevant to the research problem (Merriam 1988).

A thematic data analysis process was chosen to assist with ‘identifying, analysing and reporting patterns (themes) within data and organises and describes the data set in rich detail,’ (Braun & Clarke 2006, p.79). Creating themes to discover meaning is one of the few shared generic skills across qualitative analysis (Holloway & Todres 2003). Braun and Clarke (2006) also argue that thematic analysis is a method in its own right. They identify six phases which the author of this paper adopted.

i) become familiar with the data: reflections, interview transcripts and research diaries were read

ii) generate initial codes: all data was entered into Nvivo qualitative data analysis software and allocated to a set of pre-set codes then reviewed again and openly coded

iii) search for themes: main themes and sub-themes were created in Nvivo

iv) review themes: a mind map was created for emerging predominant themes and data was triangulated

v) define and name themes: core concepts, key themes were identified

vi) produce the report: reflexive accounts written up and how they contributed to theory.

The coding process involved organising and sorting data to help what Gibbs (2007) identifies as the process of summarising and synthesising the data to be analysed. Richards and Morse (2007) describe coding as involving linking the data to lead ‘from the idea to all the data pertaining to that idea’ (p. 137). This requires careful consideration of how the themes and concepts systematically interrelate, to lead towards the development of theory (Corbin & Strauss 2008). Following the entering of the data into the Nvivo program, a four-stage coding process was undertaken to, first, allocate the data to three sets of pre-set nodes, and, second, to enable codes to emerge from re-reading and re-coding of the data. Braun and Clarke’s (2006) six phases for thematic analysis guided all cycles of coding and data analysis. These principles were combined with Creswell’s (2007) advice to keep asking, ‘What strikes you?’
about each piece of data to ensure surprising, unusual, or conceptually interesting codes emerged.

The first stage of the data analysis used pre-set codes to identify the level of participants’ cognitive development of intercultural competencies. This stage mapped participant responses against seven intercultural competencies identified by Kühmann and Stahl (1996) and the taxonomy of cognitive development developed by Bloom (1956).

This was followed by a two-stage pre-set code analysis that enabled mapping against the two learning theories; first the characteristics of the cycles of experiential learning (Kolb 1965) and second, the elements of the authentic learning framework (Herrington & Oliver, 2000). These three sets of pre-set coding enabled a focus on the first of the sub questions, namely: what challenges arose from using an authentic, experiential learning opportunity to develop students’ competencies to communicate interculturally and to collaborate effectively in global virtual teams?

A second stage of data analysis used a more open coding approach to identify recurring data under nodes to identify nascent themes using a quantitative identification of references to similar themes. The themes identified from the pre-set coding were then compared against the emergent themes to identify commonalities, core concepts and key themes. This enabled a focus on the second sub-question, namely: what changes did these challenges suggest were needed to adapt an authentic, experiential learning opportunity to develop students’ skills to communicate interculturally and to collaborate effectively in global virtual teams?

A major issue in designing case study research is the maximisation of conditions related to design quality, in order that the research has validity. Using Yin’s (2003) conditions or tests for validity this research identified the focal importance of drawing from multiple sources of evidence including documentation and interviews to assist with construction of rich data. These multiple data collection methods also enabled between methods triangulation with data from one source compared to another to ensure reporting of evidence accurately reflected the participants’ experiences of the learning opportunity.

In summary, propositions from the findings were tied to existing literature from Kolb’s (1984) experiential learning process; Herrington and Oliver’s (2000) authentic learning
framework; from Kühlmann and Stahl’s (1996) list of intercultural competencies; Tuckman’s (1965) four stages of small group development, and factors of Zigurs and Bucklands’ (1998) Task Technology Fit theory to strengthen validity. Finally, in order to demonstrate that the measurement procedure would reliably deliver the same results wherever and whenever it is carried out (Kirk & Miller 1986), the case study investigation followed procedures and general rules for collecting, analysing and reporting data that could be replicated in other cases.
Chapter Four: Findings

4.1 Introduction

This chapter presents the findings from the two data sources comprising interviews and written reflections of the participants in this research study. The first section presents the findings related to participant development of intercultural competencies which were deemed important for international communication and collaboration. The second section identifies three challenges that emerged from the data for authentic, experiential learning designed for the virtual environment. These challenges form the three themes reported on in this chapter which are: theme one: Coaching and Scaffolding for Learning; theme two: Building Relationships for Collaborative Construction of Knowledge and theme three: Technology for Collaborative Construction of Knowledge. These themes relate specifically to two of the elements identified in Herrington and Oliver’s (2000) framework, with theme one relating to element eight (provides coaching and scaffolding by teacher at critical times) and theme two and three relating to element five (supports collaborative construction of knowledge).

4.2 Intercultural Competency Development

Findings from Interview A were analysed to identify if there were any demographic or psychographic factors that may affect participant ability to develop intercultural competency. Participants’ responses indicated that almost half (seven) of the 16 participants were born in another country (England, Serbia, Greece, New Zealand, Vietnam and Malaysia). All used English as their predominant language of communication, and although all had studied a language other than English at school, only four spoke another language fluently. All participants had friends from several different nationalities and four had hosted international exchange students. However, all stated that they were predominantly influenced by Australian cultural norms and behaviour. Fifteen had travelled overseas, eight having travelled overseas more than five times, three more than 10 times, while eight had had lengthy times of working or studying in another country. Fifteen of the 16 participants worked part-time in workplaces they identified as multicultural, although English was the major language for communication.

It was not clear if participants’ level of exposure to intercultural experiences uncovered in the first interview affected their ability to communicate and collaborate interculturally in global
virtual teams before they began their learning experience. Given this, the next question became, was there any evidence from participants’ responses that they had developed intercultural competency for communication and collaborating during the learning experience?

Participants’ responses to Interview B and written reflections were coded using pre-set nodes derived from Kühlmann and Stahl’s (1996) seven intercultural competencies and then mapped to Bloom’s Taxonomy (1956) of cognitive development. Examples of intercultural behaviour of each of Kühlmann and Stahl’s (1996) competencies were scripted for each level of Bloom’s Taxonomy (See Appendix A). These examples drew from Bryam, Budin, Kühlmann, and Müller-Jacquier’s (1996) descriptors of behaviour at three different skill levels (basic, intermediate and full) for each of the seven intercultural competencies which were created for the Intercultural Competence Assessment (INCA) Project tool (n.d). This mapping enabled identification of the level at which participants identified cognitive development of their intercultural competencies for each of the seven intercultural competencies over the period of their learning engagement. These levels of cognition enabled identification across a spectrum, from, simply developing knowledge that they remembered; to understanding of intercultural differences; to developing the ability to apply this knowledge to improve effectiveness; to whether they could use this knowledge for higher levels of analysis to improve the functioning of their global virtual teams; to whether they were able to evaluate whether their application of the competencies was appropriate and effective; and as a consequence of this evaluation, move towards creating new ways to be more interculturally competent and effective in their global virtual team (See Appendix D). The findings for each of the seven intercultural competencies are presented below, through examples of typical participant responses. Where the responses are individual rather than atypical, this is identified.

4.2.1 Intercultural Competence 1: Tolerance for Ambiguity

Tolerance for ambiguity is explained as ‘a person who functions effectively in a foreign environment where there is ambiguity and uncertainty’ (Stahl 2001, p. 201). Tolerance for ambiguity can vary from simply having the ability to recognise a complex situation but being overwhelmed by ambiguous situations which require high involvement; to demonstrating the ability when ambiguity occurs, to assemble a range of ways of managing it.
In this research study, participants’ reflections and responses indicated that there was an initial low level of tolerance of ambiguity. This is demonstrated by one participant who stated:

It was difficult learning how to work with people with different priorities and they all had breaks at different times and different university distractions. At one stage, there was no communications for three weeks (P9, Interview 2).

While one participant reflected that they:

…became extremely frustrated when members of the team from the States as well as Ireland became very unreliable when work has been requested (P7, Reflection 2).

Over time there was evidence that participants did increase their tolerance for ambiguity as participants began to comprehend different cultural approaches and apply this knowledge to take action to manage the uncertainties of their international team members’ work contributions. For example, one participant stated:

It gave me an insight into how others work, particularly the USA. How each country did research was very different (P10, Interview 2, Q6).

Yet another stated:

Groupwork is hard as many members just don’t contribute or reply and was particularly hard in the 24 hour challenge. Had to manage people and slack members a lot (P7, Interview 2, Q6).

There was also evidence that participants did develop the ability to analyse why working with different cultures caused uncertainties and how this could affect teamwork. One participant reflected:

People have different expectations of the quality of work required and what constitutes a timely submission. On occasions people perhaps didn’t deliver what was required or didn’t deliver at all. These would be common challenges faced in real working situations too (P13, Reflection 2).

However, there was little evidence that participants did significantly increase their levels of tolerance for ambiguity, particularly at the higher, metacognitive levels of evaluating and synthesising knowledge where improvements in intercultural communication and
collaboration were needed. Indeed, the major response was to try, with apparent varying responses, to ‘manage’ others rather than accept and ‘live with’ the ambiguity.

4.2.2 Intercultural Competence 2: Behavioural Flexibility

Behavioural flexibility is described as ‘a person who can vary their behaviour according to the immediate requirements of the situation and the demands of a foreign culture’ (Stahl 2001, p. 201). Behavioural flexibility can vary from simply having the ability to recognise that working interculturally requires being flexible, to having a broad and well understood repertoire of ways for adjusting behaviour and generating more positive outcomes.

In this case, participants’ reflections and responses indicated that they were initially frustrated at the behaviours of team members that indicated differing levels of commitment to the work of the global virtual team. One participant reflected that:

Learning to work with people who have differing levels of commitment to the project has been somewhat challenging (P14, Reflection 2).

Over time some participants developed ways to handle these different levels of commitment by revising their own work practices enabling them to adapt to working with other cultures, however in effect, they were still only able to demonstrate a limited range of flexibility in behaviours. This is illustrated in responses of these participants with one reflecting that:

We quickly learned that reliance on our A and B team members was difficult to find (P6, Reflection 1).

Another participant reflected that:

[it was] …apparent that we would have to use our own resources and imagination to create the campaign required, on top of tackling the challenge of working with teams from around the world (P6, Reflection 2).

While yet another participant responded in an interview:

We were really flexible with time and when we met – it felt like the A were not very flexible (P2, Interview 2, Q6).
However, there was some evidence of increasing behavioural flexibility as the teamwork progressed, with one participant reflecting:

This project has taught me to step back and take less control over my work and allow things to take their natural course, opposed to being a total perfectionist (P5, Reflection 2).

Other participants resorted to introducing differing forms of recognition for contributions to try to increase behavioural flexibility in their global virtual team collaborations. One participant reflected:

For members who have shown their lack of dedication, we gave small contributions, and for those with good initiative/interest we gave more significant parts. We also changed the pairing style, grouping inactive students to be clustered with active group member pairings (P2, Reflection 2).

There was also some evidence that some participants made effective changes to their behaviours in response to recognition of the challenges facing some members. One participant reflected:

…one teammate didn't have Facebook and wasn't being communicated to, however we didn’t know this till much later and when we did we started to use Email (P4, Reflection 2).

In summary, participants’ responses demonstrated that while they acknowledged the need for behavioural flexibility, and while they understood some of the reasons for this, they resorted to external factors (such as managing other’s behaviour) to require participants to change their behaviours, rather than developing behavioural flexibility.

4.2.3 Intercultural Competence 3: Goal Orientation

Goal orientation is explained as ‘the ability and desire to achieve one’s task goals despite barriers, opposition or discouragement,’ (Stahl 2001, p. 201). Goal orientation can vary from simply having the ability to identify the need for goal setting through to the ability to identify barriers and employ strategies to overcome such barriers and achieve goals.

In this case, participants’ reflections and interview responses indicated that, while they identified goal orientation as an important competency to develop, due to the need to
collaboratively achieve team outcomes, this was a difficult competency to develop given the different time zones that affected achievement of goals. One participant stated:

Time management was difficult. Getting things done on time and getting everyone working around time zones is very difficult (P12, Interview 2, Q6).

While participants understood the need to collaborate to achieve goals, this was also dependent on a number of other factors. One participant reflected:

We divided up the assessment based on our strengths and gave the countries responsibility to complete their tasks however the work we received back was minimal and we quickly developed an understanding that there may be curricular gaps between each school (P5, Reflection 1).

Over time, some participants did develop the ability to apply strategies to achieve goals, but this was chiefly by delegating work, rather than by changing goal-oriented behaviours of team members. One participant reflected:

The way we took action to solve this problem was by dividing the larger group into partners and delegating the tasks or sections of the report to these smaller groups of two people (P13, Reflection 2).

However, the same participant later reflected that delegating could place unequal pressure on some members and still required alternative strategies:

I have learned to troubleshoot and pick up the slack for other team members where necessary to deliver projects on time (P13, Reflection 3).

Another participant also reflected on the strategy the group applied to achieve goals:

Although there were some group members ‘missing in action’, other team members grouped together to ensure that the report was done to our best capabilities (P9, Reflection 2).

As the teamwork progressed some participants identified that more team members became increasingly more goal oriented. One participant reflected:

Everybody stepped up to the plate in time, and I felt as though we had finally become a concise, strong team. Our concerns were mainly that we were too harsh in the alterations that needed to be made as we
could see that our team members worked hard, but everybody took the feedback constructively which allowed for our strategy and report to become concise (P7, Reflection 3).

Furthermore, participants developed an ability to not only evaluate why it was difficult to engage effectively in global virtual teams, but also how to apply this to any future contributions as a member of a global virtual team. One participant reflected:

Above all I have realized you really need to have the capability to work with anyone, and work with them well. You won't always have the opportunity to pick and choose whom you get to work with in your career and so you must find ways to work well together for the benefit and successful outcome of the project at hand (P13, Reflection 3).

Indeed, some participants were able to demonstrate the ability to synthesise their intercultural capability development to identify a new approach to achieving goals in the face of opposition:

Any roadblocks we had we didn't dwell on them or complain, we looked at it yes commented on how annoying it was but then moved on and got the work done. At the end of the day we could have complained until we were blue in the face and made a spectacle with the team members involved but it wouldn’t have achieved anything for us, it just would’ve put tension on our working relationship with Ireland and America and would’ve created more problems in the future (P8, Reflection 2).

However, other participants were only able to acknowledge the need for goal orientation, blaming students from the other countries for a lack of goal orientation rather than demonstrating higher levels of cognitive learning that may have encouraged a different response. One participant reflected:

The 24-hour challenge proved particularly challenging for our team. While the A team did provide a draft infographic, the information was wrong and the design was not up to scratch, similarly the draft press release was mildly disastrous. (P11, Reflection 2).

Another participant reflected:

Again issues with the A team working on the final stage in their own separate doc and then copying into our doc at the very last minute. By Saturday before the upload we still haven't seen any work from them (P5, Reflection 2).
Yet another participant reflected:

As the person who is putting the whole report together, it is really stressing me out that I don’t have all the parts to finish it off yet. It’s 10pm on the night that it’s due and I still don’t have some of A or the B’s parts. We asked for them to be finished by Wednesday but we didn’t get them and didn’t have any explanation as to why they weren’t done (P3, Reflection 2).

In summary, participants demonstrated varying levels of development of capabilities to encourage both individual and a collaborative approach to goal orientation. While most acknowledged the need to develop goal orientation of all members, many adopted a blame approach that did not lead to higher cognitive levels for either individual or collaborative global virtual team competency development.

4.2.4 Intercultural Competence 4: Sociability and Interest in Other People

Sociability and interests in other people are explained as ‘a willingness to establish and maintain meaningful social relationships, combined with a genuine interest in other people.’ (Stahl 2001, p.201). Sociability and interest in other people can vary from simply being motivated to establish and maintain meaningful social relationships to having a deep understanding of the cultural and social needs of the group and the ability to maintain relationships in any situation.

Participants’ reflections and responses indicated that they identified the need to develop a willingness to be sociable and interested in other people in order to establish cohesion, and secure a shared commitment, to the global virtual team to teamwork. Participants did demonstrate a genuine interest in increasing their knowledge about their international team members and, in particular, the cultural differences between them. One participant reflected:

[the] opportunity to work with people from different cultures in a way I’ve never done before. I’m so excited to get to know the international students better and to get started with this assignment (P3, Reflection 1).

I also have a strong interest in the differences between cultures. With this in mind, I am very excited to see what it is like to work in a professional environment with a team made up of three different cultural styles (P13, Reflection 1).
Participants also demonstrated that they understood the value of socialisation and building social relationships for facilitating collaboration within their global virtual teams. However, there were mixed feeling about how effective the development of these social relationships was in achieving learning outcomes. One participant responded:

We used Facebook to get to know each other. We sent messages to each other and shared Snapchat to share photos of what each other’s university, weather and life was like. This was the best and worst thing as we focused so much on getting friendly but didn’t get around to working (P6, Interview 2, Q1).

A single participant felt that social links led to establishing the basis for working. This participant responded:

We added each other on Snapchat, we connected a lot and all the time, and we connected socially and had a laugh. It was still work based but really got to know each other (P8, Interview 2).

Participants were also able to demonstrate a growth in their ability to analyse how cultural differences provided diverse perspectives. This was valuable for building team knowledge and engagement. One participant reflected:

[it was a] good learning experience as we were able to engage with each other and broaden our knowledge as well as learn from each other (P10, Reflection 3).

Some participants did demonstrate the development of some ability to evaluate the importance of the working relationship in a new situation. Based on this insight, they adapted their work behaviour to ensure that it preserved team relationships. One participant reflected:

I learnt through this that you must be tactful when communicating to team members that their work may be amended for the greater purpose of the assessment – this was also necessary to maintain a good relationship with our intercontinental counterparts (P6, Reflection 2).

Another participant reflected:

The project taught me how to respect other peoples learning and working styles, in real life work, assignments in other subjects and in day-to-day life … It was really interesting to see how they wrote and communicated, and what they expected from us … It came across as almost rude, but then I realized that it is just their culture (P4, Reflection 2).
Some participants identified that they needed more knowledge on cultural differences from the educators before they could move from simply being social to applying this knowledge to build more effective intercultural working relationships. One participant stated:

Having the lectures on cultures and how people work differently helped to understand how they work and we realized how to work with them better (P14, Interview 2, Q1).

Another participant reflected:

Learning how to deal with different cultures was extremely insightful, especially learning about Hofstede’s ‘cultural dimensions’ … and the way that different countries handle business, even though USA, Ireland and Australia aren’t on all on different ends of the spectrum, there will always be differences (P4, Reflection 3).

In summary, despite demonstrating that participants recognised the opportunity to develop understanding about different cultures by socialising with participants from other cultures, the ability to translate this knowledge into higher levels of cognition varied. Several participants identified the value of, and need for, greater educator scaffolding for their intercultural competency development.

4.2.5 Intercultural Competence 5: Empathy

Empathy is explained as ‘the capacity to accurately sense other people’s thoughts, feelings and motives and to respond to them appropriately’ (Stahl 2001, p.201). Empathy can vary from simply having the ability to consider another’s feelings and motives (although may still view them as curious) through to an ability to accurately sense others’ feelings and know how to embrace them for positive outcomes.

Participants’ reflections and responses indicated that they identified the need to maintain goodwill with international team members. Some participants demonstrated an understanding of the importance of recognising different ways of acting and different personalities. One participant reflected:

Everyone has their own strengths and weaknesses, different working styles, different ways of understanding things and different ways they have been taught or instructed to do things by their
mentors. We have vastly different personalities throughout our group, particularly across the different countries (P13, Reflection 2).

Some participants also demonstrated an understanding of the importance of considering foreign team members’ feelings and the need for making response adjustments in a compassionate way that preserved good working relationships. One participant reflected:

I understand there are different models to suggest that different cultures adopt attitudes and behaviours that are common on home ground but may be received profoundly different to people existing in separate cultures (P11, reflection 2).

Another participant reflected:

The biggest challenge was trying to not offend anybody by collaborating the work and correcting parts. It was a little awkward and we didn't know what they would feel about it and it was often too late close to submit time to discuss with them (P4, Reflection 3).

Participants did demonstrate the ability to analyse their partner team members’ situation in order to understand the level and type of contribution different members of the global virtual team could make to the team output. One participant reflected:

We knew we were going to be completing the majority of the work - especially the press release - because no one from either Ireland or America had any PR background. Although in saying that both teams tried their best to get us something to use, even if it wasn’t the best final product we were glad to see that the others had at least attempted (P8, Reflection 3).

There was also some evidence that participants developed a level of empathy to evaluate how best to share the work between members of the global virtual teams. One participant reflected:

We ensured that the groups of two consisted of one Australian and one American or Irish team member each. This meant there was more discussion over the tasks and jobs at hand between the countries, rather than having an ‘us’ and ‘them’ situation, which could have isolated countries into their own cultural groups (P13, Reflection 2).

Additionally, there was some indication that few participants were able to synthesise their experience into knowledge for future intercultural encounters. One participant reflected:
This Global WIL project has taught me beyond what I could have imagined. It's taught me to be more understanding of people and to try to listen more (P15, Reflection 3).

However, other participants demonstrated that they struggled to move to higher levels of cognitive domains, tending to become frustrated and blame other members of the global virtual teams. One participant reflected:

The American team have also started their own google doc in which they draft all there work and then copy it in the Groups Google Doc when its finished. I’m not sure why they would do that?? Its really frustrating… (P5, Reflection 2).

Another participant reflected:

For the final assessment however, there was little to no communication between our country’s. Australia did communicate with [U] and [I] students but some of them were idle and didn’t reply back to us as much (P10, Reflection 3).

Finally, some participants identified a need for additional assistance from educators to assist them with managing cultural differences, in particular the application of empathy, predicting how international team members may feel or think, to inform how they all worked together.

One participant stated:

Lectures framing up how cultures are different and how they work differently. The talks gave us a good insight into how to work with each other (P1, Interview 2, Q1).

Another participant stated:

The cultural theory slides presented raised differences in culture and made us think about things we may not have considered before (P13, Interview 2, Q1).

In summary, participants identified different levels of development of empathy that resulted in a difficulty in evaluating how members from different cultures would react. Some participants identified the positive value of educators providing more understanding of cultural differences.
4.2.6 Intercultural Competence 6: Non-judgementalness

Non-judgementalness is explained as ‘the willingness to critically re-examine one’s own values and beliefs, and to avoid judging other people against one’s own norms’ (Stahl 2001, p.201). Non-judgementalness can vary from simply having the ability to consider other’s values and beliefs as valid in their own right through to the ability to respect and appreciate values different to one’s own even if they give rise to inner conflict.

Participants’ reflections and responses indicated that they developed knowledge about the cultural differences of global virtual team members. One participant reflected:

Everyone in the other teams seems nice … Different, but nice. Different doesn't mean bad? (P15, Reflection 1).

Some participants’ responses indicated that they were able to understand how this appreciation of different cultural perspectives could be advantageous to the global virtual teams. One participant reflected:

Working with these different types of students also offers a fresh perspective on ideas, angles and ways to tackle things, which my fellow Advertising students and I may not have considered (P13, Reflection 2).

Other participants’ responses identified an application of this new knowledge in assisting team members to view the cultural differences between global virtual team members as valuable. One participant reflected:

… they wrote and communicated, and what they expected from us (P4, Reflection 2).

However, there were also examples of participants’ comments on their team members’ differences suggesting that some participants failed to develop non-judgementalness. One participant reflected on their team members’ differences as:

America is crazy. And I mean in a good way. They are ‘country bumpkins’ which is cute. (P15, Reflection 1).

Other participants commented on team members’ work ethic. One participant commented:
… some of the student’s not really contributing as much work as the others which was in my opinion, a bit disappointing and unfair (P10, Reflection 2).

Finally, participants’ responses identified the need for more intervention by educators to provide more information about cultural differences to help avoid jumping to conclusions about culturally different behaviour. One participant replied in an interview that:

The cultural theory slides presented raised differences in culture and made us think about things we may not have considered before (P13, Interview 2, Q1).

In summary, some participants identified an increase in non-judgemental competency, but also commented that further assistance was required from educators to develop and use this competency to improve communication and collaboration within global virtual teams.

4.2.7 Intercultural Competence 7: Meta-communication

Meta-communication is explained as ‘the skills to clarify culturally different perceptions and to sensibly “guide” the intercultural communication process’ (Stahl 2001, p. 201). Meta-communication can vary from an ability to simply identify and describe different cultural communication styles to an ability to clarify misunderstandings and adapt communication conventions when communicating with people from other cultures.

Participants’ reflections and interview responses indicated that they developed their knowledge about different ways of communicating beyond just being told that this occurs.

One participant reflected:

Even though all of our teachers told us MANY times ‘Even though we are all english speaking countries, we don't speak the same language,’ I really didn't comprehend this to be true until now (P15, Reflection 1).

Participants also demonstrated an understanding that these differences could have adverse consequences if they were not addressed. One participant reflected:

We discovered that the different personalities, opinions and writing styles often made it tough when completing stages of the major report (P13, Reflection 2).
While one other participant responded in an interview:

We needed to agree on report writing style as it was all different (P5, Interview 2, Q6).

Participants’ responses demonstrated development of the ability to apply their meta-communication skills to solve and prevent problems with communicating and collaborating.

One participant stated:

I communicated differently with the USA and Irish members than how I communicated with Australians. I learnt how to change tone of communication to get different outcomes (P7, Interview 2, Q6).

There was also evidence that participants did develop the ability to analyse the cause of conflicts in communication. One participant stated:

I thought to myself that the hangout was slightly awkward; the lag of the video chat and fact that we literally had never met our teammates before were the probable reasons. However, later reflecting it is perhaps just a difference in communication styles (P5, Reflection 1).

Participants also demonstrated the ability to evaluate problems of intercultural interaction in terms of underlying causes to conceive of strategies for minimising conflict in future interactions. One participant reflected:

… underneath the contribution issue it was really an issue of knowing how to communicate with the team members, how to understand their expectations, cultural habits and ways (P7, Reflection 3).

Another participant reflected:

I now believe I will be able to take what I have learnt and implement it into my future studies or the workforce. The communication across the countries was also very beneficial as the industry now isn’t just situated in one country its universal and to be able to learn the foundations of communication between other countries is something that will positively impact me in the future of my career (P1, Reflection 3).

However, there were also examples of participants who struggled to adapt to different communicative conventions or generate new methods to prevent or clarify misunderstandings. One participant reflected:
In my initial communication of my concept to the international teams I completely bamboozled them. They had no idea what I was talking about (P5, Reflection 1) … There is a lot of confusion regarding our website. I created a website profiling friends of mine to mock up what our concept would look like … THIS IS A MOCK UP! was a conversation that was had in every google hangout (P5, Reflection 3).

Therefore, while some participants demonstrated advanced levels of competence in developing meta-communication competencies, this varied across participants. Further, there was little evidence that participants developed these competencies to create higher levels of meta communication skills.

4.2.8 Summary of Intercultural Competency Development

In summary, the findings suggest there was unequal development of the intercultural competencies between participants and across the cognitive levels. While there was evidence that most participants did develop greater knowledge about the need to develop a range of intercultural competencies for communicating and collaborating effectively in their global virtual teams, the ability to develop these competencies varied. In some instances, several participants were able to develop their level of competency to apply this new knowledge to improve the functioning of the global virtual teams and to use this to analyse how to improve communication and collaboration within the teams. There were also a few instances of competence in evaluating and synthesising these competencies, but this was not widespread as indicated in the Table 3 below.

<table>
<thead>
<tr>
<th>INTERCULTURAL COMPETENCIES (Kühlmann &amp; Stahl 1996)</th>
<th>BLOOM’S TAXONOMY (case study participants’ responses indicating knowledge level acquired for each intercultural competency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance for ambiguity</td>
<td>Knowledge (remembering) X Comprehension (understanding) X Application (applying) X Analysis (analysing) X Evaluation (evaluating) X Synthesis (creating) X</td>
</tr>
<tr>
<td>Behavioural flexibility</td>
<td>Knowledge (remembering) X Comprehension (understanding) X Application (applying) X Analysis (analysing) X Evaluation (evaluating) X</td>
</tr>
<tr>
<td>Goal orientation</td>
<td>Knowledge (remembering) X Comprehension (understanding) X Application (applying) X Analysis (analysing) X Evaluation (evaluating) X</td>
</tr>
<tr>
<td>Sociability</td>
<td>Knowledge (remembering) X Comprehension (understanding) X Application (applying) X Analysis (analysing) X</td>
</tr>
<tr>
<td>Empathy</td>
<td>Knowledge (remembering) X Comprehension (understanding) X Application (applying) X Analysis (analysing) X Evaluation (evaluating) X</td>
</tr>
<tr>
<td>Non-judgementalness</td>
<td>Knowledge (remembering) X Comprehension (understanding) X Application (applying) X</td>
</tr>
<tr>
<td>Meta-communication</td>
<td>Knowledge (remembering) X Comprehension (understanding) X Application (applying) X Analysis (analysing) X</td>
</tr>
</tbody>
</table>

Table 3  Level of knowledge developed per intercultural competency (with X denoting significant development and x denoting some development)
For the purposes of this thesis, a question of interest is what do these findings suggest about the challenges for designing authentic, experiential learning design when seeking to develop competencies for communicating and collaborating in global virtual teams? The findings of the variable development of this particular competence highlight the importance of the eighth element of Herrington and Oliver’s (1965) authentic learning design, that is, the learning framework “provides coaching and scaffolding by the teacher”. This is explored further in the next section of this chapter that looks at the challenges for authentic, experiential learning designed for the virtual environment. The first of these challenges is explored under theme one, coaching and scaffolding for learning, which is the eighth element identified in Herrington and Oliver’s (2000) framework, (provides coaching and scaffolding by teacher at critical times). This exploration uses the pre-set data analysis coding of participants’ responses in relation to the extent and form of their engagement in the authentic, experiential learning project.

4.3 Theme One: Coaching and Scaffolding for Learning

Given that initial analysis of the participants’ development of competencies for intercultural communication and collaboration highlighted the importance of appropriate scaffolding for learning, the next section presents a deep analysis of the findings gathered from participants’ self-reflection and interview responses about their experience of the learning design. This section presents findings mapped against two learning design frameworks. These are Kolb’s (1984) four cycles of experiential learning and Herrington and Oliver’s (2000) nine elements from their instructional design framework for conducting authentic learning in multimedia environments.

4.3.1 Experiential Learning

Participants’ reflections and interview responses were mapped against the four cycles of experiential learning (Kolb 1984) to identify if they moved through each of the cycles as they communicated and collaborated in their global virtual teams during the learning opportunity.

Cycle 1: Concrete (Real) Experience

Participants overwhelmingly identified that the project enabled them to engage in a concrete learning experience. One participant reflected:
The project … actually helped me as in my internship we were given a PR brief from India (P4, Reflection 3).

Participants further responded that working on a real project for a client made the learning experience real. One participant reflected:

The real client made it more authentic and more believable (P9, Interview 2, Q5).

The live client aspect was awesome …. Having the chance to promote something that is positive for the Melbourne community it was really exciting and inspiring to be part of this project. Having the real client made it current and relevant and worthwhile and that it could be used and provide value to someone is exciting (P16, Interview 2, Q5).

The fact that we are presenting back to them makes it more real and an end game to work towards and we are making sure it is a good document and final outcome so it has to be good – going external so want it to be a professional standard (P8, Interview 2, Q5).

Cycle 2: Reflection and Observation

Participants identified that they engaged in a wide range of reflection and observation about their experiences of the global virtual teams. One participant reflected:

It has definitely taught me a lot about how I deal with people and how to become more organized (P7, Reflection 3).

Participants identified what was required to collaborate effectively in global virtual teams. One participant reflected:

With so many team members, this project has taught me to step back and … allow things to take their natural course, opposed to being a total perfectionist (P6, Reflection 3)

Participants identified how to organise the contribution of team members so that deadlines were met. One participant reflected:

We quickly established that we would need to set deadlines for work to be completed a few days prior to the actual date that the work is due. This was necessary to ensure that myself, X and Y were satisfied with the quality of work that was to be submitted and also gave us time to amend any work that wasn’t up to scratch (P11, Reflection 1).
Participants identified what knowledge was required to choose appropriate technology and social media tools to use. One participant responded in an interview:

It was good to learn how to use all the tools. With Google Hangouts, we had to learn how to do it – it took us a few times to get it right. We learned how to use technology for business applications – Google Hangouts video conferencing and Google Docs (P11, Interview 2, Q1).

Cycle 3: Abstraction and Conceptualisation

Participants had more difficulty moving from reflection and observation to abstraction and conceptualisation of their knowledge. For example, one group identified that they were able to share understanding of the task from their particular cultural perspective:

We improved the original document and took in all the feedback from all 3 teachers. We ensured that we looked at what the teachers had said and made sure that we applied it to the next document (P7, Reflection 2).

On the other hand, some participants struggled to conceptualise solutions to underlying problems that were preventing the global virtual teams to work effectively. For example, one participant reflected that it was difficult to gain consensus on a team solution to the client brief:

We discovered that the different personalities, opinions and writing styles often made it tough when completing stages of the major report to be able to successfully pull everything together into a succinct and concise finished document that read well from start to finish (P13, Reflection 2).

Another participant reflected on problems of trying to share, and complete work:

Attempting to delegate the project workload across three countries has proven to be quite difficult, especially when group members are not participating fully in the class … I asked everyone to submit their work early so I could get it done before I left. I was very disappointed as not all group members followed this requirement… It has become clear to me that in this project there are a few people driving it, while the rest are happy to do as little work as possible … decided it was just easier if the Australian students were in charge of the rest of the document … implementation plan was also incomplete from the X students, which I had to redo on their behalf (P2, Reflections 1-5).

Cycle 4: Active Experimentation

Many participants commented on the active experimentation and adjustment they made to their interactions over the course of the learning experience. Typical of comments in written reflections were the following:
I worked with X and Y to figure out which parts would be most suitable for each group member. We also changed the pairing style, grouping inactive A students to be clustered with active group member pairings (P2, Reflection 2).

Since our group was a bit confused and didn’t really communicate as well beforehand in terms of what we were going to do about the assessment, I found that this Google Hangout was a great way to communicate altogether and work out and clear up anything that was unclear in the assessment (P10, Reflection 2).

In summary, as highlighted in Table 4 below, there was evidence that participants experienced each of the four cycles of experiential learning. However, while participants clearly articulated their engagement in Cycle 1, 2 and 3 they were less able to identify their learning from the experience. Indeed, it was clear that participants identified significant challenges in moving beyond observation and reflection to abstraction and conceptualising new knowledge. This limited their ability to move to the active experimentation stage to try to improve communication and collaboration between members of the global virtual teams and to experiment and actively test new concepts.

<table>
<thead>
<tr>
<th>Experiential learning cycle</th>
<th>Case study participant responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Concrete (real) experience</td>
<td>learning experience identified as ‘real’</td>
</tr>
<tr>
<td>2. Reflection and observation</td>
<td>functioning of the global virtual teams requirements for collaboration how to deal with complex issues of technology</td>
</tr>
<tr>
<td>3. Abstraction and conceptualisation</td>
<td>problems identified but unable to conceptualise solution leading to ongoing problems</td>
</tr>
<tr>
<td>4. Active experimentation</td>
<td>some action taken to adjust way communication and collaboration within teams occurred examples of inability to break out of repeated action</td>
</tr>
</tbody>
</table>

Table 4 Examples of experiential learning cycles in case study (adapted from Kolb 1984)

4.3.2 Authentic Learning in the Design of the Learning Opportunity
Participants’ reflections and interview responses were further analysed to identify if they recognised elements of authentic learning in the design of the learning opportunity.
Element 1: Reflects the Way Knowledge Is Used in Real Life

Participants identified that working together in global virtual teams helped them to develop skills they need to work globally. One participant reflected:

> Working cross-culturally is a fundamental skill that will give me a competitive edge when I join the workforce, which made me apply for the project. I believe the skills I learn throughout Global WIL will assist me in my future career, as being able to work across different time zones and utilise different modes of communication and find solutions to overcome communication roadblocks is highly valuable in Public Relations. Through devising a communication strategy for X, I am strengthening my existing domestic Public Relations skills (P8, Reflection 1).

Element 2: Provides Authentic Activities

Participants revealed that the context of activities and ill-defined tasks in which they engaged, reflected an authentic global, virtual, work environment. This is exemplified in the following interview response:

> … it made it a really valuable learning opportunity to explore creative solutions and knowing we are presenting back to a real client makes you work harder. Had to be in keeping with a brand and tone and make you realise you have to work with the right materials (P5 Interview 2, Q5).

Participants further reflected that through this experience they acquired knowledge and skills they could draw from in real work or job applications. For example, one participant commented in their written reflection:

> Employers want students who can readily fit into and work well in an organization. This means they want graduates who are able to plan and organize their work, solve problems, work in teams, use technology effectively and understand how to be effective in the workplace. These are skills that developed through Global WIL. I feel like I have now had first hand experience in each of the key points mentioned above, all of which will contribute to success in similar situations I may face in future (P13, Reflection 3).

Element 3: Presents Access to Experts and Modelling of Processes

Participants identified in responses to interview questions and written reflections that they were able to access various levels and forms of expertise and thinking from both interactions with the industry client and from other members of the global virtual teams. For example, one participant reflected:
It is also very useful to work alongside students from different disciplines such as Marketing and Public Relations. My own chosen discipline of Advertising must work together with both Marketing and Public Relations constantly in the working world, so an understanding of this along with early exposure to it is critical. Working with these different types of students also offers a fresh perspective on ideas, angles and ways to tackle things, which my fellow Advertising students and I may not consider (P13, Reflection 1).

Another participant highlighted the cultural expertise different students brought to the exercise:

… between America and Ireland, our work styles vary significantly and thus, I am learning how to collaboratively work with other cultures (P8, Reflection 1).

Element 4: Provides Multiple Roles and Perspectives

There was evidence that participants explored their international team members’ view points and that producing the work outcome required a range of skills and perspectives. This enabled the members of the global virtual teams to share different aspects of the work according to their specific skills. For example, participants reflected:

Team members were split based on skills, rather than countries, which allowed for us to become more connected and ‘learn the ropes’ in regards to working in an online team (P9, Reflection 2).
We divided up the assessment based on our strengths and gave the countries responsibility to complete their tasks (P11, Reflection 2).

However, some participants reflected that they struggled with the need to consider others different points of view, and to communicate their ideas, with one participant reflecting:

In the end my Australian and I team really felt they just weren’t understanding us, so we agreed that I would mock up the concept…there is still a lot of confusion regarding our website (P5, Reflection 3).

Element 5: Supports the Collaborative Construction of Knowledge.

Participants reflected that the project taught them the need to respect different perspectives and styles of learning and working. For example, one participant reflected:

The biggest challenge was trying to not offend anybody by collaborating the work and correcting parts (P4, Reflection 2).
Participants identified the need to work together to share and delegate work. For example, one participant reflected:

This week we delegated who is doing what tasks with whom for Stage one of our assessments. Each Australian member has been paired with an American to work with his or her delegated parts. I have been paired with x to complete the Situational Analysis, which we will combine notes on over the weekend (P2, Reflection 1).

Participants also identified the need to collaborate to solve problems. For example, one participant stated:

In the Hangouts we’d allocate tasks and ask to clarify any issues or problems we could talk them through… useful as we were all in one place and all on at the same time. We used time in the Google hangouts to work together too (P1, Interview 2, Q2).

Participants reflected on the importance of developing positive personal relations with all members of the global virtual teams to facilitate collaboration. For example, one participant reflected:

I have tried to establish a good relationship with my team members and identify what they are going to contribute most effectively with. I find this method of leadership encourages group members to want to do their work and feel more valued (P2, Reflection 2).

However, several participants identified that they struggled to gain the full participation from team members required for collaboration. For example, written reflections included comments such as:

I had to round up members to submit their work to me and even re-write it in some cases (P2, Reflection 2).

For the final assessment however, there was little to no communication between our country’s [sic]. Australia did communicate with American and Irish students but some of them were idle and didn’t reply back to us as much (P5, Reflection 3).

Element 6: Promotes Reflection to Enable Abstractions to Be Formed
Participants reflected that parts of the learning activity were particularly helpful in promoting reflection as the basis for abstractions to develop new knowledge and concepts. For example, several participants highlighted the assessment task identified as the 24 Hour Challenge requiring students to collaboratively produce a piece of work for the client by working ‘around the (24-hour) clock’ in three eight-hour work shifts in each country.

Doing this 24 Hour Challenge was quite a bit of a challenge. Although some of the content that we were given was incorrect, we were, as a team, able to work together and put everything into place/form. The Challenge especially, was a great experience in which I value and will be able to apply my knowledge and insights in the future of my course/career when working in a time frame/working in collaboration (P10, Reflection 2).

Wow, in 24 hours, this was a fantastic experience that can be a true reflection of real life scenarios in the industry. We went through every stage of this challenge, with team members unavailable, to people working on it in their lunch breaks, to research being completely off topic, to then a strong, informative infographic and press release for X (P9, Reflection 2).

However, some found it more difficult to apply reflection to form abstractions when applied to their collaboration and communication within their global virtual teams. For example, one participant reflected:

We discovered that the different personalities, opinions and writing styles often made it tough when completing stages of the major report to be able to successfully pull everything together into a succinct and concise finished document that read well from start to finish … (P13, Reflection 2).

Element 7: Promotes Articulation to Enable Tacit Knowledge to Be Made Explicit

Participants indicated that working with different cultures assisted them to recognise and articulate how to overcome different cultural approaches to communicating and collaborating:

… being able to work across different time zones and utilise different modes of communication and find solutions to overcome communication roadblocks is highly valuable … (P8, Reflection 3).

The same participants demonstrated how the learning opportunity encouraged them to consider, and articulate a growing understanding of working with different cultures:
… the Global WIL Project has been an eye-opening experience, where I’ve learnt a lot about cultural differences and how to work with a team of people that I’ve never met face-to-face (P3, Reflection 2).

… open my eyes to cultural differences that seemed impossible to overcome. There have been language barriers (even though we all spoke English), curriculum gaps, time management challenges and the list goes on … (P11, Reflection 2).

However, some participants found it difficult to articulate a growing understanding of intercultural communication. Moreover, as these participants demonstrate in their reflections, they required further assistance to be able to grasp and articulate an understanding of how to communicate and collaborate with different cultures:

I found it very hard to communicate with the other international students (P 12, Reflection 1).
As the months got deeper and deeper into uni it became harder to deal with the communication barriers between the group (P15, Reflection 3).

Even with our regular hangouts and constant Facebook messaging, we (the Australian group) found it difficult at times to convey what we wanted to the Irish and American team members (P11, Reflection 2).

Element 8: That Coaching and Scaffolding by the Teachers Was Provided at Critical Times

There was evidence that when teachers performed a coaching and scaffolding role, it assisted students to resolve some of the complexities of working in a virtual, multicultural, multi-temporal learning environment. An important factor included the need for more understanding of differences between cultures. Several participants identified the value of lectures in assisting members of global virtual teams to understand differences between how people work:

Having the lectures on cultures and how people work differently helped to understand how they work and helped us realize how to work with them better (P14, Interview 2, Q 1).

Lectures framing it up how cultures are different and how they work differently, the talks gave us a good insight into how to work with each other (P1, Interview 2, Q1).

Other participants valued the provision of assistance on the broader skill needed. One participant reflected:
A major issue that was also faced was the lack of understanding in regards to the strategy. I myself spent a couple of Facebook video chats with one of the girls from America to further explain the strategy. We giggled due to the confusion on both sides, especially with our accents and way of speaking/language getting in the way … Once we received the feedback from all three teachers, we took it on board to ensure that the report would become more concise. With this, it created a better understanding of the strategy for X, making our team more connected (P9, Reflection 2).

Some participants identified their lack of experience in running meetings and required assistance. One participant stated:

… we didn’t have time to plan for the meeting. We didn’t have formal agendas, we just highlighted what we needed to cover. The USA or Irish all joined the meeting as individuals it was too broken up and disjointed, we needed some strategies for how to run a meeting (P5, Interview 2, Q 1).

Another participant reported their group needed assistance to know how to operationalise the information communication technology to run their video meetings:

We held our first official Hangout On Air, an hour of technical difficulties proceeded before we could begin (P6, Reflection 1).

Element 9: Provides Authentic Assessment of Learning within Tasks.

Participants identified that the requirements to produce a professional report together, and to present the report findings to the client, presented them with an authentic assessment opportunity. Participants reflected:

We all worked together to put the document together and in the end came up with really great work between all three countries (P10, Reflection 2).

It was more real and a lot better than just a case study … It is good being able to present to a client as it makes you perform better (P1, Interview 2, Q5).

It’s good as it puts more pressure on us to have something worthwhile and as we are presenting to the client you try harder and as it’s real, we get feedback. X was really interesting and lead to more creative ideas (P3, Interview 2, Q5).
In summary, as highlighted in Table 5 below (p.84), there was evidence that participants recognised the realistic environment the project created and the positive opportunity to engage in an authentic learning experience. The information provided by the client was sufficient for them to complete the authentic assessment task. They did learn how to share their separate cultural knowledge through collaborating in the global virtual teams. They did reflect on the information being shared and conceptualise their learning to prepare a report for the client. Finally, educators did provide some of the scaffolding they needed, and the assessment was authentic. However, participants also identified the struggle they had with collaboration, and there is little evidence that they were able to turn their tacit cultural knowledge into explicit knowledge.
Table 5  Evidence of elements of authentic learning in the design of the case study

<table>
<thead>
<tr>
<th>Elements of authentic learning</th>
<th>Evidence from participants’ responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflects the way knowledge is used in real life</td>
<td>Developed skills for working globally</td>
</tr>
<tr>
<td>Provides authentic activities</td>
<td>The client brief was realistic</td>
</tr>
<tr>
<td>Presents access to experts and modelling of processes</td>
<td>Members of global virtual teams and client provided expert cultural knowledge and understanding</td>
</tr>
<tr>
<td>Provides multiple roles and perspectives</td>
<td>Members of global virtual teams adopted roles based on different perspectives</td>
</tr>
<tr>
<td>Supports the collaborative construction of knowledge</td>
<td>Mixed responses, collaboration was developed but difficult and led to uneven spread of workload</td>
</tr>
<tr>
<td>Promotes reflection to enable abstractions to be formed</td>
<td>Some evidence, but difficulties in developing abstractions from reflections</td>
</tr>
<tr>
<td>Promotes articulation to enable tacit knowledge to be made explicit</td>
<td>Some evidence but difficulties for some in articulating</td>
</tr>
<tr>
<td>Provides coaching and scaffolding by the teacher at critical times</td>
<td>Some evidence of coaching and scaffolding from teacher, but needs more</td>
</tr>
<tr>
<td>Provides for authentic assessment within the task</td>
<td>Assessment was authentic</td>
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</tbody>
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4.3.3 Summary of Theme One: Coaching and Scaffolding

In summary, analysis of the first stage of coding is mixed but does highlight that for participants to develop intercultural competencies to higher levels at which they can abstract, conceptualise and experiment with what they have learnt, they need appropriate coaching and scaffolding of their learning. With these types of support and the assistance of an engaged educator, students can proceed to the higher levels of analysis, evaluation and synthesising of their knowledge needed to improve their intercultural communication and collaboration in global virtual teams. This may not be continuous, but rather needs to be mapped to certain periods of their learning.

In the second stage of (open) coding, participants’ responses were categorised in terms of emerging nascent themes. Two principal themes emerged as vital to support element 5, the collaborative construction of knowledge, of the authentic learning framework (Herrington
and Oliver 2000), which were the importance of building relationships and choosing appropriate technology.

To enable a deeper analysis of these two principal themes, the findings are presented using two additional frameworks that were identified in the literature review as having been applied in recent research into collaboration in the virtual environment. For theme two, Relationships, Tuckman’s 4 stage model of group development is applied, and for theme three, Technology, Task-Technology Fit theory (Zigurs & Buckland 1998) is utilised.

4.4 Theme Two: Building Relationships for Collaborative Construction of Knowledge.

Open coding of participants’ reflections and interview responses identified that building and maintaining relationships was important for participants in order to support the collaborative construction of knowledge in their global, virtual teams through intercultural communication and collaboration.

These findings are presented below using Tuckman’s (1965) four stage model of group development: forming, norming, storming and performing. Given his finding that each of the four stages are necessary and inevitable in order for the team to grow, it was important that participants’ responses were mapped against these stages. This enabled exploration of any team relationship building challenges for the design of authentic, experiential learning that aims to develop competencies in both intercultural communication and collaboration for global virtual teams.

Stage One: Forming

The first stage of Tuckman’s model, the forming stage, identifies the initial period during which team members meet and explore interests and skills. Typical behaviors during this stage include polite and cautious communication in which the purpose and goals for the team are discussed. In this stage members typically display varying levels of commitment, often avoiding responsibility.

Participants’ reflections and interview responses confirmed that the learning opportunity provided opportunities for the team to form relationships by sharing knowledge about their
personal situations and interests. This included discussion of seasonal and cultural differences. This is demonstrated in the reflections of two participants:

The first two weeks of the project were spent getting to know our group members from [A] and the [B] … We spent the fortnight snapchatting and messaging on Facebook Chat like old friends and sharing different aspects of our culture such as the Iowan Snow, Melbourne ‘sun’ and Irish Colleges (P5, Reflection 1).

We just started on small talk, discussing the warm weather as they exclaimed that we were all wearing summer clothes while they were bundled up in warm clothes and blankets. Abby even showed our team outside her window, and there was snow on the ground (P4, Reflection 1).

Participants identified that this sharing increased clarity and led to positive expectations as to how the group may work together. One participant reflected:

They’re all very hard working and very set on getting everything done in advance … After 4 weeks, it seems that our group will be able to work quite well together throughout the rest of the project (P7, Reflection 1).

Another participant reflected that the ability to build relationships at this formative stage was assisted by the suggestion by the teacher to produce a short video of an aspect of each student’s social, work or study life:

This week we were assigned to make a team introduction video in the day in the life of an RMIT student … It was a great being able to share our life as a student here in Melbourne with the other teams in America and Ireland (P10, Reflection 2).

However, there was also evidence that it was a little difficult to find the right balance between communication focused on socialising and that for work planning in these early meetings. One participant reflected:

The [U] didn’t really tell us much about themselves and seemed really keen to get into the work, so this week was less of a ‘getting to know you’ week and more of a discussion/brainstorming session (P3, Reflection 1).

The same participant later reflected that the team was perhaps too focused on socialising rather than work and that this had a detrimental effect on completing the assessment:
Upon reflecting on our first submission, I believe that we worked well however may have been focused too much on making friends, opposed to working and completing the assignment which led to a bit of a rush (P6, Reflection 2).

Another participant’s reflection suggested that technical difficulties impeded them from greeting each other initially, although they were able to eventually operationalise the information communication technology to meet:

The first video call … took quite a while to figure out for everyone, with some participants just a little silent anonymous face symbol at the bottom of the screen for almost twenty minutes. Finally, the chat worked and we were able to chat and greet each other (P4, Reflection 1).

As the formation stage progressed, time zone differences were identified as a further challenge as the geographical placement of team members spanned several time zones. This was particularly the case when team members tried to organise google hangout meetings where all members needed to be present at the same time. One participant reflected:

The difficulties of working with people in different time zones were a constant challenge from beginning to end, especially to organize our hangouts, which were always inconvenient for some. We ended up with some hangouts at 7am, and some at 10pm (P6, Reflection 2).

A further factor that emerged during the formation stage was evidence of different educational standards. This led to concerns as to how the team would achieve its expected assessment outcome. One participant’s interview response described this disquiet:

Big curriculum gap between [B] and Australia. The levels of study and the work we produce is of a much higher quality, it feels very primary school level from overseas, so we were always trying to bring them up to our standard. We should have done a skills analysis, although we did tell each other what we do up front to find who does what where and when … (P11, Interview 2, Q6).

Stage Two: Storming
The second stage of Tuckman’s model, storming, identifies a period during which members starting to express their opinions and ideas. This can lead to some confusion as different opinions on goals, approaches and control are revealed and uncertainty leads to exploration of different ways to communicate. During the research, the storming stage was experienced
by participants, particularly when external pressures from the need to submit assessments occurred. One participant reflected:

… the strategy changed as assignments progressed due to confusion between countries over what the strategy meant, I believe that this led to the strategies and tactics being diluted because of a lack of clarity over what they were, which caused confusion over all sections I believe (P 6, Reflection 2).

Participants’ responses provided evidence of stress during this stage. One participant identified that trying to coordinate collaboration led to issues of how to control the activity of team members:

We found that our patience with [B] especially was running thin because we felt as if we were being taken advantage of by the [B] team because we did take control and did oversee the entire strategy. We felt as if they weren’t meeting us halfway and wouldn’t help us with at least reading over their work from the previous parts and change it according to the comments we received (P8, Reflection 2).

Another participant reflected on strategies developed to overcome different attitudes to meeting assessment deadlines:

Stage 1 of the assessment was when the cracks began to show with our overseas team members, while the Australian team at this stage felt organised we quickly learned that reliance on our [B] and [A] team members was difficult to find … We quickly established that we would need to set deadlines for work to be completed a few days prior to the actual date that the work is due … I learnt through this that you must be tactful when communicating to team members that their work may be amended for the greater purpose of the assessment – this was also necessary to maintain a good relationship with our intercontinental counterparts (P11, Reflection 2).

Added to these stressors was, once again, the location of team members in different time zones. Two participants emphasised:

The [B] or [A] didn’t factor in time zones and would post that something is due in ten mins and needs a response now, so they didn’t factor in it was 2am for us (P11, Interview 2, Q6).

Another participant reflected on the confusion that varying abilities to manage time zones created:
Drama Drama Drama. Waking up to a Facebook message at 2am from America saying they have a draft due three days prior to the assessment being done isn't the greatest. Communication has dropped off. Nowhere did it say they had a draft due (P15, Reflection 2).

On the other hand, participants’ responses identified that by working through these differences, participants were able to make adjustments and start to define how the team would operate. One participant reflected:

Dealing with different time zones and communicating to the international team members with these time constrictions was another challenging aspect of the project, but it was a great way to learn how to make compromises and organise how and when to organise the Google Hangouts (P3, Reflection 2).

Stage Three: Norming

The third stage of Tuckman’s model, norming, is when groups overcome resistance and accept other’s ways of working in order to get work done. This stage is characterised by more trust and clearer communication about agreed group norms to facilitate team performance. Participants’ responses provided evidence that this stage was reached. One participant reflected:

… we were able to share our different point of views and ideas. It was a really good learning experience as we were able to engage with each other and broaden our knowledge as well as learn from each other (P10, Reflection 2).

Another participant reflected that team members facilitated team performance by treating each other with respect:

[Members] … are willing to work with you as long as you treat them with respect and don’t get too ‘bossy’ … I have tried to establish a good relationship with my team members and identify what they are going to contribute most effectively with. (P2, Reflection 2).

Participants also reported that they developed the ability to communicate more clearly and openly and that this helped to both improve the quality of work and to build team confidence. This is illustrated by one participant’s reflection:

My Australian team and I were a bit unsure as to the quality of work we would receive but were surprised, both countries gave us in depth information and weren’t afraid to approach any of us if they needed clarification or help with any of their parts (P8, Reflection 2).
However, other participants identified the need for more external coaching. One participant reflected on the need for peer coaching due to varying levels of writing ability of different members:

Since the international students had no PR background and didn’t really know how to approach writing a press release or make an infographic, we sent them some examples and went over how to write/make one (P10, Reflection 3).

Several participants identified the need for external support to build effective teams. One participant explained:

We needed some more tips on how to get team members to contribute and work well together, some help with how to get the best out of people (P11, Interview 2, Q6).

Another participant highlighted the need for more scaffolded assistance at various periods of time:

When it came to bringing the project together some people slacked off, as I was bringing it all together it was hard to get them to contribute. Suggest more strategies for getting things done early and more stop points/checkpoints (P14, Interview 2, Q6).

Stage Four: Performing

At the fourth stage of Tuckman’s model, performing, the team works openly and trustingly, with team members taking responsibility for tasks and problem solving to benefit the whole team. Participants’ responses identified that some teams reached the performing stage working together as a cohesive unit to achieve the team’s goals. One participant reflected:

Stage 3 of the report was smooth and problem free. Everyone did a great job on the sections they worked on and overall we were happy with the final report we had made. Collating the final document was also quite enjoyable as I final got to see how it all looks as one large report … Having completed the report and seeing how everything turned out, I am happy with how the process of everything went. It was a great experience working with students all around the world … Some aspects of international group work were stressful, but at the end of the day I feel that our group was lucky to have every member be super engaged and motivated to produce a strong report (P14, Reflection 3).

There was also evidence that some teams did openly communicate and collaborate. One participant reflected:
[our team] … communicate altogether and work out and clear up anything that was unclear in the assessment. We all worked together to put the document together and, in the end, came up with really great work between all three countries (P10, Reflection 3).

There was also evidence that some teams established structures and processes to support team performance. This is illustrated in a time series of reflections of one participant that demonstrates issues were clarified over time using a collaborative approach to problem solving which helped the team to perform:

Since our first part of our assessment was due this following week. Having sent out an email to everyone in terms of splitting up the work evenly between all three countries, we touch on how everyone was going on the assessment and if anyone needed any clarification, help etc (P10, Reflection 2).

Our second part of our major assessment was also due this week as well so we did another Google Hangout with the countries to discuss anything that was unclear and touch on how we were all going with the assessment. We had a 2 day deadline for everyone to finish the assessment 2 days before it was due, and we handed everything on time (P10, Reflection 3)

With our last and final assessment due the following week, we did a Google Hangout and once again, allocated who was going to be doing what part of the assessment. We all had our strengths and agreed on what we were going to do (P10, Reflection 4).

However, other participants reported that getting the team to perform as a cohesive unit was difficult. One participant reflected that this was partly due to different competencies of members:

… we felt let down by the contributions of [A] but they just aren’t up to the level of writing that we are. We had to do all the work ourselves and felt a lot of the workload was on us. This caused a lot of tension, as we had to be quite critical (P15, Interview 2, Q6).

This response was echoed by another participant who again emphasised the challenge of time management:

Time management was important as getting things done on time and getting everyone working around time zones is very difficult (P12, Interview, 2 Q6).
4.4.1 Summary of Theme Two: Building Relationships

In summary, participants did demonstrate that teams moved through the four stages of Tuckman’s (1965) model and that this led many teams to ultimately becoming a well-performing team. However, there was also evidence of difficulties caused by different approaches to task-orientation, levels of knowledge and inadequate relationships. Several participants identified the need for more external support and coaching to help participants overcome different levels of competencies and different approaches to meeting assessment time requirements. The most significant difficulty identified was caused by the location of team members in different or multi-time zones, particularly when trying to organise meetings using ICT tools. This highlighted the third theme that emerged from the open coding, the importance of choosing the right ICT tools to enable participants to communicate across time zones.

Most importantly, while Tuckman (1965) suggests that coaching is required at the storming stage of his team formation model, these findings suggest that coaching is required earlier, at the formation stage for teams operating in a global virtual environment. The importance of early coaching was identified through participants’ reflections or responses. This indicated that participants were not adequately prepared for managing the range of challenges associated with forming and operationalising teams in the global virtual environment, and that such challenges made it difficult to reach the performing stage.

4.5 Theme Three: Technology for Collaborative Construction of Knowledge

The third theme that emerged from the open coding of participants’ reflections and interview responses identified that within the virtual and multi-temporal environment, the choice of appropriate ICT tools to support the collaborative construction of knowledge was extremely important. The importance of this finding relates to Herrington and Oliver’s (2000) fifth element of authentic learning design using multimedia, which is to ‘support collaborative construction of knowledge’.

As identified earlier, although existing research into developing global virtual teams identifies the differences between Web 1 and Web 2 technologies, it does not identify the link
between forms of communication and digital technologies. To achieve this, Task-Technology Fit (TTF) theory (Zigurs & Buckland 1998) was invoked during the research for this thesis. Task-Technology Fit theory identifies the degree to which features of a technology match the requirements of the task. It proposes that technology will have a positive impact on performance only when functionality is matched to task requirements (Goodhue & Thompson 1995). Poor fit is associated with poor performance. In general, TTF has focused on task characteristics, technology features, and how these fit to influence performance. This connection between technology chosen and performance, has been found to be important in the virtual environment with Maruping and Agarwal (2004) claiming that the functionality of the ICT must be matched to specific tasks to enhance the effectiveness of global virtual teams. For the purpose of this research, TTF was identified as choosing the technology to accord with three forms of communication, written, verbal and visual. Before presenting the TTF associated with these forms, the next section identifies an overview of participants’ identification of the importance of technology in enabling them to operate in global virtual teams.

4.5.1 ICT for Learning How to Communicate and Collaborate in Global Virtual Teams
Participants identified that technology played a pivotal role in providing an experience of operating in global virtual teams. This is illustrated by responses from several participants that the learning opportunity could not have transpired without the technology:

A huge role, if we didn’t have the technology, we couldn’t have done it (P2, Interview 2, Q1).

If we didn’t have the technology it wouldn’t have happened (P8 Interview 2, Q1).

Without technology it couldn’t have happened (P11, Interview 2, Q1).

However, participants also identified the advance needed, in both skills and knowledge, of how to utilise the technology tools for other than social exchanges. For assessment purposes, students in this example were required to use technology, such as Google Hangout videos as well as meeting platform and online collaboration applications such as Google Docs and Google Sheets. Several participants identified in their interview responses that learning how to use these technologies for learning purposes was extremely beneficial as both students and potentially as future workers:
Used Google docs to collaborate and did all our communicating online and we know how to use it all now (P3, Interview 2, Q1).

I would now always use Google docs for group assignments and have started using it at work in my internship as well now I know how to do a Google hangout on air (P4, Interview 2, Q1).

Huge part – it was essential to use the Google Apps. I am a lot more comfortable with the Google apps and how you can work over this technology in a group and it will be fine, I am more relaxed about using these tools and can see this as a good way of working (P16, Interview 2, Q1).

An important part of this class has been learning and using Google’s suite of applications. … Having the opportunity to learn to use these well has been an interesting part of the project for me. It’s exciting to see technology reach a point of incredible usability and ease (P14, Reflection 3).

Additionally, several participants identified in their reflections that problematising the technology assisted them to develop transferable skills:

Initially getting connected with Google Hangouts was a challenge, as it is not so easy to navigate. Once you have figured out how it works, however, you can get a conference up and running pretty quickly.

We have had issues with sound, visuals and feedback; all common problems when trying to communicate overseas! (P3, Reflection 2).

Large role – even the struggles with technology have been a good learning curve and encouraged me to understand this and use this (P7, Interview 2, Q1).

It was good to learn how to use all the tools. With Google Hangouts, we had to learn how to do it – it took us a few times to get it right. We learned how to use technology for business applications – hangouts video conferencing and Google Docs (P11, Interview 2, Q1).

It was challenging. I feel more confident trouble shooting with this technology now. I know how to arrange meetings as it’s a bit awkward as you learn by doing it (P13, Interview 2, Q1).

In summary, participants identified that information communication technologies were an essential requirement for learning how to communicate and collaborate in their global virtual teams. An explanation of how suitable the ICT tools were for different types of written, verbal and visual communication is now presented.

4.5.2 Choice of ICT for Different Forms of Communication

Participants identified that the ICT tools they utilised for collaboratively constructing knowledge in their global virtual teams had certain advantages or disadvantages according to
the form of the communication (written, verbal or visual) they used and the purpose of the communication.

Written Communication
Participants’ reflections and interview responses identified that four ICT tools were utilised for written communication - Google Docs, Facebook Groups, Facebook Messenger and email.

Participants identified that Google Docs was advantageous for clarifying the correct version of written information, particularly when multiple versions were circulating. This is exemplified in the following responses:

- Google Docs was great for collaborating on a single document (P14, Interview 2, Q6).
- Used Google docs and loved this and used this as the one place to put everything (P15, Interview 2, Q4).

Another participant’s response identified that Google Docs was useful for record keeping functionality and helped with identifying which team members contributed to which sections of a document:

- Google Docs was good to see everything everyone put in and as it was live we could see who was doing what (P8, Interview 2, Q4).

However, other participants identified that Google Docs was only beneficial if all team members used the same Google Doc, as otherwise, confusion occurred:

- Google Docs were good as you have one space where we could add all information and compile it as we go but this is only really useful if everyone uses this in the same way and the [B] often sent their information via separate emails instead (P4, Interview 2, Q4).
- We used Google Docs for collaborating but the [B] had their own separate doc … so it was only useful if we were all in one doc all at the same time (P1, Interview 1, Q4).

Participants identified that Facebook Groups were beneficial for regular updates and for keeping the flow of written communication together. This was evidenced in one participant’s reflection and another’s interview response:
We’ve made a Facebook group conversation to be able to communicate as a group more effectively instead of multiple emails that go back and forth (P7, Reflection 1).

Primary form of communication was Facebook particularly for regular updates and top of mind (Participant 11, Interview 2, Q1).

Other participants identified that Facebook Groups assisted them to understand when a written message had been posted and when it had been viewed, as illustrated in two interview responses:

We used a Facebook group as you see who has read the messages and when (P7, Interview 2, Q1).

We used the Facebook Group page, we posted all the things and questions and schedule for the week and you could see who’d seen it or liked it (P1, Interview 2, Q4).

A further participant reflected that Facebook Groups helped clarify the order of written messages from team members posting from different time zones:

We instead decided to create a Facebook group, and told everyone to post there so that it was easier to read and be updated. We realised this was better with dealing with the different time zones (P12, Reflection 2).

In addition, several participants identified that some team members were more comfortable expressing themselves in written text in their Facebook Group posts. This is illustrated by two participants’ interview responses:

Facebook group was used to communicate and to see who was active and what you need to talk about. People shared more in typing than talking on screen (P5, Interview 2, Q1).

It’s important to speak and chat but we achieved less in the hangouts than chatting on Facebook where we were able to achieve more (P6, Interview 2, Q2).

However, other participants identified that Facebook Groups actually limited communication as some team members were reluctant to put their thoughts in writing. One participated stated:
We asked them to comment on Facebook to something, but they didn’t want to put it into writing as it would be taken the wrong way – yet they would talk in a hangout (P8, Interview 2, Q3).

A further criticism of Facebook Groups was that they did not provide enough contextual information to understand the meaning of the written communication. One participant stated:

Going back and forward on messenger wasn’t resolving things and you can’t gauge their emotions and what they are feeling on Facebook or text – sometimes they thought I was angry or annoyed but when we could see someone you could read their body language and could gauge their emotions (P8, Interview 2, Q2).

A final criticism of Facebook Groups was that they were not used universally by all international team members, leading to a reduction in efficacy. This is illustrated in both reflections and interview responses by two participants:

We used Facebook group for sending in documents and sections of the report, but the USA are not very active on Facebook and didn’t respond much (P3, Interview 2, Q1).

All seemed to work well, however there were some instances where one teammate didn’t have Facebook and wasn’t being communicated to (P4, Reflection 2).

The extension into Facebook Messenger also drew different responses. One participant’s interview response identified that Messenger was useful for keeping in regular contact:

We used messenger to check in and see how people were going and alert each other to posts (P8, Interview 2, Q3).

Another participant’s reflection identified that written communication in Messenger was a helpful reminder of items discussed verbally in the Hangout video calls:

We always go over hangout material on Facebook group messenger (P2, Reflection 1).

Other participants found that Facebook Messenger had functions that helped to speed up the rate of written communication as identified in these two participants’ responses:
With instant messaging, everyone has alerts, Messenger pops up in your laptop window if Facebook open. This has been good for doing instant replies (P7, Interview 2, Q1).

If we needed an instant reply, we’d use messenger (P10, Interview 2, Q1).

However, in some cases the efficacy of Facebook Messenger to achieve a rapid response and overcome time zone differences was not evidenced. This is illustrated by the interview responses of two participants:

…we used Facebook messenger as it was instant and popped up on the phone so you could see what was needed, but it was hard to respond because the time differences meant there would be 30 messages when you woke up (P12, Interview 2, Q1).

Facebook messenger chat is seamless but needed to know time zones to moderate expectations of a response (P11, Interview 2, Q4).

Furthermore, Facebook Messenger was identified as not always provide enough contextual information to understand the meaning of the written communication. This is illustrated by the response of one participant:

On Facebook messenger and email sometimes, responses from USA and Ireland were very short and it seemed like they were angry yet when they were in the video chat, they seemed fine and friendly – written messages were more easily misconstrued (P4, Interview 2, Q4).

Finally, email, or electronic mail, although used sparingly for written communication, was identified as useful for one-way communication (sending tasks) and for larger documents. This was illustrated by several interview responses:

We emailed tasks in Gmail and to send heavier content (P10, Interview 2, Q 2).

Only time we used email was with Google Docs or for sending chunks of content through email and for file sharing (P11, Interview 2, Q 3).

One participant identified that email helped to keep track of written communication:

Used email to document assessment tasks as you could go back to the email, check the email – like a noticeboard (P9, Interview 2, Q3).
While another participant found email was convenient for written communication that didn’t require a quick response:

A few emails re delegation of work – if didn’t need a reply to straight away (P13, Interview 2, Q3).

On the other hand, one participant identified that the team to which they belonged did not use email at all:

We never emailed we did Facebook Group and Messenger to get a quick message (P12, Interview 2, Q3).

Verbal Communication

The findings identified that participants used one technology tool, Google Hangouts, for verbal communication. This platform was primarily used for verbal communication during audio-visual conferencing with international team members.

Participants stated that Google Hangouts facilitated synchronous verbal communication that helped to advance discussions and ideate. This is illustrated in two participants’ interview responses:

We used Google Hangouts to have conversational discussions around assignments (P10, Interview 2, Q1).

Google Hangouts helped for sure, we used this for brainstorming (P11, Interview 2, Q1).

Another participant reflected that holding a verbal discussion in Hangouts helped to provide clarity:

After communication over hangouts with the group we were able to come to an understanding and give our campaign some clarity for the final assessment submission (P1, Reflection 2).

Several other participants emphasised the importance of the synchronous nature of the verbal conversations enabled by Google Hangouts. This is illustrated by responses that point out the discussion in Google Hangouts assisted clarification of issues and advanced decision making:

We used the Google Hangouts on Air for the important team decisions we could talk things through rather than going back and forth on chat (P13, Interview 2, Q13).
In the Hangouts we’d allocate tasks and ask to clarify any issues or problems, we could talk them through … (P3, Interview 2, Q2).

Would have been hard to get them to understand our concept as I had to talk it through – the hangouts helped to finalize something – we’d go back and forth asking the same questions and then we’d clarify it in a Hangout (P5, Interview 2, Q3).

However, the technical requirements of Google Hangouts were difficult to manage. This is illustrated by the identification of the time it took to learn how to communicate in Google Hangouts, together with process, connectivity and sound issues. This is illustrated by the responses of several participants:

With Google Hangouts, we had to learn how to do it – it took us a few times to get it right, plus internet connections were dodgy so we had to make sure everyone had a good connection (P11, Interview 2, Q3).

Initially getting connected with Google Hangouts was a challenge, as it is not so easy to navigate. Once you have figured out how it works however, you can get a conference up and running pretty quickly. We have had issues with sound, visuals and feedback; all common problems when trying to communicate overseas! (P2, Reflection 1).

We discussed the next stage of the assignment, and the 24 hour challenge. I experienced some technical difficulty as my Wi-Fi at home isn’t very good, so I mostly listened to the hangout, rather than participate (P2, Reflection 2).

A further limitation of Google Hangouts was the need for all team members to join the Google Hangout online at the same time to conduct synchronous discussions. One participant identified that not everyone was present all the time, while another identified the adverse consequences of members not being present:

This week, we had a google hangout that was scheduled for 7.30 am. Despite waking up so early, I was disappointed to see that not everyone was present for the hangout (from the overseas teams) (P12, Reflection 3).

It really showed that [A] were always part of the Hangouts so understood what was going on … [B] who didn’t come didn’t know what was happening or follow up on work (P4, Interview 2, Q2).
Two participants reflected that the time zone differences caused by the geographic dispersion of team members thwarted attempts to bring members together in the Hangouts to hold discussions:

The US and Irish students would have plans to have a hangout, but it was too late for us on the RMIT side (P12, Reflection 2).

The difficulties of working with people in different time zones were a constant challenge from beginning to end, especially to organize our hangouts, which were always inconvenient for some. We ended up with some hangouts at 7am, and some at 10pm. The earlier of which, I was unable to attend two of because of work commitments (P6, Reflection 2).

Visual Communication

Findings identified two ICT tools used for visual-based communication: Google Hangouts video calls and Snapchat, with each providing varying levels of usefulness. On the one hand, Google Hangouts video functionality was identified as useful for providing visual cues to clarify communication, with one participant stating:

…when we could see someone in the Hangouts, you could read their body language and could gauge their emotions (P8, Interview 2, Q2).

Several participants reflected that the Google Hangout video function enabled members to share contextual differences. One participant reflected:

We just started on small talk, discussing the warm weather as they exclaimed that we were all wearing summer clothes while they were bundled up in warm clothes and blankets. Abby even showed our team outside her window, and there was snow on the ground (P4 reflection 1).

Another participant stated that:

We saw everybody in a hangout – when we saw them all in the first couple of hangouts …The [B] were always in hoodies, trackies, PJ’s even whereas we were all dressed well for work and all together. The [A] girl, she was always in bed (P4, Interview 2, Q 4).

Several participants commented on the importance of visual information that Google Hangouts supplied in helping team members get to develop as a team. This is illustrated by the responses from two participants:
Google Hangouts on Air we had four of these and at the start it helped us get to know them (P15, Interview 2, Q1).

Even though the Hangouts were a pain to get started they helped you get to know each other as you could see their faces and body language (P2, Interview 2, Q1).

In addition, Google Hangouts were perceived as contributing towards members being more accountable for a collaborative team output. Once participant commented:

We pushed each other on the hangouts to get things done – as we were seeing each other each week we knew we had to account for what we’d done (P14 Interview 2, Q3).

Another participant said Hangouts facilitated collaboratively and synchronously constructing a written document:

In the Hangouts as everyone was there and present, they would start doing things straight away like send a link or type into a Google Doc – and we worked on it while we were in the Hangout (P14, Interview 2, Q2).

However, other participants stated that not all team members were present in Google Hangouts. One participant stated that as an outcome, this led to unseen team members not being considered part of the team:

I feel a lot closer to those that participated in the Google hangouts than those that didn’t. If I didn’t see them at all I don’t feel they were part of it (P2, Interview 2, Q1).

Snapchat was also utilised to help communicate visual information to assist with communication and collaboration.

Participants’ responses identified Snapchat as useful for sharing personal details as members worked to establish team bonds. This was illustrated by one participant who stated that:

We used Snapchat which is visual as well the MyStory feature on Snapchat, we always used this as it reveals a part of your life (P7, Interview 2, Q1).
Other participants identified that Snapchat allowed team members to separate personal visual communication from business communication. This is illustrated by one participant’s response:

> We liked the visual sharing and stories and liked having separate platforms for personal and work (P9, Interview 2, Q3).

While another participant reflected that Snapchat provided important visual cues to the different temporal and cultural contexts in which team members were operating:

> We spent the fortnight snapchattin … like old friends and sharing different aspects of our culture such as the Iowan Snow, Melbourne ‘sun’ and Irish Colleges (P6, Reflection).

### 4.5.3 Summary of Theme Three: Technology

In summary, participants’ responses identified that their ability to communicate for the purpose of collaborating, varied according to the attributes of the ICT tool they utilised, the form of communication they chose, and the activity they were executing. While each ICT tool was found to have advantages for undertaking written, verbal or visual communication for collaborative construction of knowledge, they also presented disadvantages. These disadvantages were associated with the degree of difficulty associated with operationalising the ICT tools where technical skills as well as good connectivity were required. Further shortcomings emerged related to the following areas: how certain ICT tools were chosen or used; different cultural preferences for and practices in using ICT tools; as well as the ability of ICT to enable effective communication and collaboration across different time zones.

These challenges suggest that students required scaffolding and coaching to assist with developing the required technical skills for the ICT tools selected before they begin written, verbal and visual communication and collaboration with international team members. Additionally, they should be assisted to understand how to select the most appropriate ICT tools to manage different cultural communication preferences and practices, as well as multi-temporal factors to ensure the most effective choice and usage of information communication technologies transpires.
4.6 Findings Chapter Summary

This chapter presented the findings from the pre-set and open coding of data collected from 16 participants who undertook an authentic, experiential learning opportunity situated in a virtual environment in order to develop competencies for global virtual teamwork upon graduation. Three main themes emerged from the data, i) Scaffolding for learning, ii) Relationships, and iii) Technology; as crucial requirements, for the development of effective global virtual teams and, to enable learning of required communication and collaboration skills in global virtual teams.

Importantly, it was also found that while students developed some of the competencies required for operating in global virtual teams, further strategies were needed to enable the experiential learning of effective global virtual teamwork to transpire. What this signifies for changes required in designing authentic, experiential learning opportunities in a complex global, virtual learning environment will be presented in the next chapter.
Chapter Five: Discussion

5.1 Introduction

This final chapter returns to the research question: what challenges are presented, and changes required, to adapt authentic, experiential learning opportunities to the virtual environment in order to develop students’ competencies to communicate interculturally and collaborate effectively in global virtual teams?

Building on the challenges identified in the literature in Chapter Two and from the findings in Chapter Four, this chapter is focused on the changes needed to ensure that characteristics of cycles of experiential learning and elements of authentic learning are adapted to support learning beyond the virtual to incorporate the global environment. In particular, the challenges identified suggest a necessity to focus on what is needed to develop student competencies in communicating interculturally and collaborating effectively, as members of global virtual teams in order to meet business requirements for graduates to have such skills. The findings suggest the need for more attention to be given to the overall design of authentic, experiential learning opportunities to ensure the focus is upon developing students’ higher-level cognitive skills that are transferable to new work contexts. These include the abilities to analyse, evaluate and synthesise knowledge of behaviours for improving team collaboration, and of the knowledge and skills to ensure a good fit between the technology chosen and the purpose of the communication.

The discussion presented in this chapter takes, as its starting point, that authentic, experiential learning opportunities have value in what has been identified in this study as the ‘simple domain’ (in which the individual learning of knowledge and development of skills is used to contribute to collective understanding). However, in order for authentic, experiential learning opportunities to develop students’ competencies for what has been identified in this study as the ‘complex domain’ (in which collaborative construction of knowledge is needed to ensure students develop the work-ready skills to communicate and collaborate effectively to solve problems and make decisions across both multi-cultural and multi-temporal environments), more finely grained guidance by educators is required. Therefore, the discussion in this chapter acknowledges the challenges identified for communicating and collaborating in global virtual teams across both multi-cultural and multi-temporal environments is complex.
and requires more attention by educators on the element identified by Herrington and Oliver (2000) as coaching and scaffolding. This element needs to be unpacked and reconstructed to enable more detailed and tailored design and implementation by educational practitioners to ensure authentic, experiential learning opportunities are provided to students in a more supported learning environment. Before presenting the changes that will likely be necessary for successful implementation of this requirement, the next section presents a more detailed explanation of what has been identified as the two learning domains, simple and complex.

5.2 Learning Domains

5.2.1 The Simple Domain
The simple learning domain, for the purpose of this research, is described, with reference to the three introductory levels of Bloom’s Taxonomy (1956), as a scenario where the emphasis is upon individuals remembering, understanding and applying knowledge to engage in intercultural communication. In relation to the research conducted for this thesis, findings from participants’ reflections and responses indicate that they have gained an understanding of how to communicate effectively as individuals, on a social basis, sharing cultural knowledge. This helped them to begin the group ‘norming’ stage (Tuckman 1965) to seek and provide feedback, and to clarify issues related to the authentic business tasks in which they were engaged. There was also some evidence that participants were able to identify initial task technology fit (Zigurs & Buckland 1998) in the use of simple ICT tools, such as email and image exchange, to engage in social, one-on-one, linear sharing of information. Thus, in the simple learning domain, the scaffolding required for the authentic, experiential learning opportunity was able to be built on a simple platform, with the coaching required to develop behaviours needing less coordination and ongoing intervention by the educators.

5.2.2 Complex Learning Domain
The complex domain, for the purpose of this research, is described, with reference to the three more cognitive elements of Bloom’s Taxonomy (1956), as a setting where the emphasis is upon participants, as members of global virtual teams, analysing, evaluating and synthesising knowledge, in order to be able to perform effectively as a team in collaborating to make decisions, (Tuckman’s [1965] group ‘performing’ stage). In this domain, the information exchange is more complicated, requiring increased two-way, synchronous and often non-linear, communication in order for participants to proceed to develop shared
understandings of team work goals, take actions to complete tasks required to achieve them, and make decisions as a high performing team.

However, the findings from participants’ reflections and responses indicated that, as members of global virtual teams, some students found it difficult to move beyond the conflict (storming stage) to perform effectively as teams. Several reasons for these students’ difficulties emerged from the same findings. First, students lacked the ability to know how to translate their knowledge of cultural differences into an understanding of how these differences might affect their ability to communicate and collaborate as members of global virtual teams (for example, how it might affect their work and study behaviours). Second, they did not have the behavioural skills to assist them in collaborating equally as team members (for example, in how to address unequal sharing of the workload). Third, they lacked the advanced knowledge and skills associated with choice and usage of ICT (for example, how to select the most appropriate technology tool to suit the form of communication; written, verbal or visual [i.e. face to face]). A combination of these limitations resulted in the students not being able to collaborate in a manner that enabled them to develop the higher-level cognitive skills of analysing and synthesising information in order to achieve consensus while making decisions. These difficulties were further intensified when two-way synchronous discussion was required, as participants lacked the ability to manage temporal differences (accounting for different time zones, public holidays and academic calendars). This resulted in unequal participation from team members and ineffective team collaboration.

The existence of these challenges in the complex domain of global virtual teams suggests a more central role for educators would be beneficial for students. The findings show crucial contributions are required by educators, during the design and scaffolding of knowledge for student acquisition of higher-level cognitive skills; and also, when identifying the level, type and timing of coaching in developing these skills. The findings suggest that students require not only knowledge about cultural differences, but also an appreciation of the implications of cultural differences when seeking to make collaborative decisions between members of global virtual teams from multicultural backgrounds. They also need more assistance in developing cognitive skills as a basis for developing collaborative behaviours, and they need skills to analyse differences in cultural usage of ICT. Interestingly, this conclusion echoes important points identified in Chapter One related to PBL and IBL. In the first instance,
Konings (2018) identified the need for significant levels of coaching and support for PBL, while, in the second instance, Kirschner, Sweller and Clark (2007) identified the importance of guidance to support cognitive processes necessary for learning. These theories confirm then, that the twin demands of establishing global team relationships at the same time as solving a task related problem present a major challenge for global virtual teams, and thus more attention needs to be given to related skill and behaviour development.

This leads to the conclusion that, rather than requiring changes to the authentic, experiential learning opportunity itself, the principal change needed is in the design process undertaken by educators, to take into account the learning space (including the learning platform) that supports the learning opportunity. This conclusion is in keeping with the earlier finding identified in Chapter One by Kolb and Kolb (2009), that the actual setting (learning space) in which the learning is to occur needs to be taken into consideration. The relevance of this point was, indeed, highlighted at the commencement of this research project when attention turned to the question of who would be invited to participate in this research project. At that stage it was identified that, due to a lack of alignment of subject (course) objectives and assessment, participants could only be drawn from the group of Australian students. This highlighted the fact that, while there was agreement between the educators in each location to engage their students in the authentic experiential learning opportunity, there was no agreement on how this learning opportunity would align within each of the overall subjects (courses). The main impact of the lack of alignment became evident in participants’ feedback identifying this issue as creating a source of difficulties with collaborative behaviours in the global virtual teams. For example, teams could not agree on timelines for contribution or commitment to a team approach to assessment. Given this conclusion on the need for greater educator alignment, the next section discusses the change needed as ‘the dilemma of the educators’ for ensuring comprehensive, aligned and common scaffolding and coaching support for students.

5.3 The Educators’ Design Dilemma: Designing the Learning Space to Support Authentic Experiential Learning Opportunities

In this case study, while all three educators (from the Australian, Irish and American universities involved in the learning experience) agreed on the value of the authentic experiential learning opportunity, the overall design was undertaken primarily by one
educator, which it has been shown by feedback gathered during the course of the research, caused difficulties. To rectify this issue, there is a need for the design process to include an alignment between the authentic experiential learning opportunity and the overall course (subject) design in each location. This process requires the scaffolding and coaching element identified earlier from the students’ perspective, to be applied to the design by the educators. Given that the educators are themselves located in different educational and cultural locations, across multiple time zones, this alignment may require educators to themselves establish and operate as a global virtual team. Based on the findings of the participants, the educators’ focus needs to be on ensuring that the design addresses both the framework (scaffolding) and support (coaching) provided for students to develop collaborative behaviours. Turning first to scaffolding, there is need for educators to agree on a common plan for enabling student engagement in the authentic experiential learning opportunity and for enacting a common process of support during student engagement.

5.3.1 Enabling Plan for Scaffolding

Scaffolding to support the authentic experiential learning opportunity requires, first, an agreed plan to enable positive student engagement. This enabling plan, which is illustrated in the upper left-hand side of Figure 1 (located on p. 107), needs to include commonality on the:

i. aim for the overall course/subject in which the learning opportunity is embedded
ii. constructive alignment between the aim of the overall course/subject and assessment associated with the authentic experiential learning activity (task)
iii. agreement of type and level of student knowledge, skills and behaviours required of students participating in the authentic experiential learning activity (task)
iv. co-ordination of student study timetables.

Commonality of how the authentic experiential learning opportunity contributes to the aim of each course (subject) would enable students to overcome the challenge of facing differential foci for their attention. This thesis proposes that for educators to assist students in acquiring the group skills and behaviours they need for productive global virtual team development, they need to find some commonality concerning several crucial areas of educational planning. The research has identified the main areas of interest as constructive alignment between course learning aims and the assessment tasks or activities; identification of the specific skills required to use technology for communication and collaboration purposes; and the knowledge needed to complete authentic work. Identification of the level of knowledge,
skills and behaviours the students currently have would also contribute to planning for more equitable contributions to the authentic task set for the global virtual team. Coordination of study timetables, teaching schedules, academic calendars and assessment due dates would also enable students to reduce complexities associated with working across geographically dispersed locations in order to produce the required work by the required deadlines.

In addition to these preparatory actions, further challenges identified by the participants and recorded in the research data collection, suggest there is also a need for educators to plan for consistent scaffolding and equal support systems for all students throughout the learning experience to ensure there are equal opportunities for students to work and learn collaboratively. Examples are illustrated in the upper right-hand side of Figure 1.

5.3.2 Scaffolding to Enact Support

As noted above, the scaffolding for the authentic experiential learning opportunity ideally involves an agreed process for enacting support for students while they are engaged in their global virtual teams. It is proposed that this enabling support, which is illustrated in the upper right-hand side of Figure 1, needs to include agreement on:

i) check points for observing student interactions
ii) processes to enable shared educator reflection on their observations
iii) processes to ensure common feedback to students
iv) feedback is aligned and focused on development of higher levels of cognitive skills and behaviours.

Agreement on checkpoints at critical time intervals during projects to observe student interactions, would enable educators to consider ongoing information needs and identify issues related to developing collaborative relations within the global virtual teams. These checks should be scheduled at regular intervals to garner information on students’ ability to progress with building higher levels of knowledge for effective team relationships. Checkpoints at the commencement and conclusion of the authentic experiential opportunity are particularly important as they provide a chance for educators to gather feedback and conduct a stock-take of students’ experiences. At the commencement, checking in on what students need to progress can support students to develop confidence in learning how to greet and interact with their intercultural team members and develop a better understanding of different cultural and temporal environments and their potential impact on their ability to communicate and collaborate effectively. Checking on students’ progress and support needs
towards the end of the learning opportunity can help support students to address flagging enthusiasm with team collaboration and reduce concerns about meeting final assessment deadlines.

Developing an agreed process to reflect on and share observations between educators would also ensure agreement on a common form, level, degree, type and substance of feedback support to the students and thus assist to improve their ability to collaboratively solve problems and construct knowledge. An agreed approach may include development of a common feedback document or rubric which would ideally be aligned to classifications.

Agreement on consistent feedback sources and strategies would avoid the confusion and misdirection students experience by receiving varied advice from multiple sources and would assist students to understand what is required to collectively progress towards the achievement of higher levels of knowledge and skills. The next stage of the educators’ design dilemma turns to the coordination of the coaching support the educators need to provide.

5.3.3 Coaching to Encourage Behavioural Development

As noted earlier, this thesis recognises that students will need ongoing coaching to encourage collaborative behavioural development. To establish circumstances that encourage positive behaviours and discourage negative behaviours by students; and also normalises typical behaviours, educators first need to collectively identify, agree on, and design a coaching process. The agreed coaching process, illustrated in the lower right-hand side of Figure 1, should include identification of:

i. the types of behaviours students need to develop collaboration
ii. a progressive approach that ensures coaching support at appropriate times
iii. the forms of coaching support required to encourage appropriate behaviours.

By agreeing on the ideal behaviours needed for team collaboration, and then completing a comparison with the cultural behaviours of each student cohort, a clearer picture may be gained of where gaps in student capability exist. These measures would target areas of need and enable the alignment of support for students struggling with the behavioural and performance aspects of collaboration.
A coordinated approach to progressively providing coaching would minimise interference that occurs when redundant support is provided, (such as showing tech-savvy students how to upload a digital image), whilst maximising the effect of support provided to students at the time when they need it most, (such as during initial interactions with international team members or at key team decision-making times). This type of ‘just-in-time’ support could be identified through the checkpoints discussed earlier.

Agreement on the forms of coaching that educators should provide to support students with the development of appropriate behaviours, would reduce any confusion that can arise when different forms of instruction is provided to teams, and help to provide a clear course of action for students to take. Receiving a singular and dedicated form of support ‘on demand’ would also reduce the need for students to have to discuss and agree on a course of action they need to take.

5.3.4 Coaching for Evaluating ICT

Earlier discussion has confirmed that developing a common approach to coaching students on evaluation and application of ICT tools enables them to better communicate and collaborate in their global virtual teams. These developments would enable educators to provide support that takes into account the different ways each culture uses ICT, as well as evaluating within each student cohort the different levels of experience they may have with the ICT tools used for conducting business. This coordinated approach to supporting the choice and usage of ICT, illustrated in the lower left-hand side of Figure 1, should identify:

i. consideration of cultural differences in usage of ICT tools
ii. the differential use of technology for written, verbal or visual communication
iii. the skills required for using ICT tools.

Coordinated support of students’ consideration of cultural variances in using and applying ICT tools would enable educators and students to reflect on and discuss their own cultures’ customs for using ICT tools for work and social purposes. These steps could be factored in to support appropriate choice and usage of ICT tools for team communication and collaboration. By taking time out to consider these influences, the risk of students missing out on important information conveyed via inappropriate, or not well used, ICT tools is reduced. Students can
also be encouraged to choose and use ICT tools that are inclusive of all team members’ needs.

Developing a coordinated approach to coaching students to formulate and apply an understanding of the fit of certain ICT tools to the different forms of written, verbal or visual communication would guide students to collectively discuss and decide on the most effective ICT tools for each communication task. This would encourage students to choose the most appropriate ICT tool for each communication task which could help reduce confusion that may arise, for example, when a student uses an ineffective tool such as instant messaging to discuss a complex concept with their team members. Choosing the most efficient forms of ICT could also help to improve the speed of communication and the level of collaboration between global virtual team members.

Collectively arranging support for students to be able to operationalise ICT tools for effective communication and collaboration with their global team members, would allow educators to factor in the level of skills each of their student cohorts currently have, to inform the development of more targeted and timely support strategies. This would reduce superfluous coaching of students who already have the required skills while providing the necessary skills coaching to students who most need it. Aligning all students to a comparable level of knowledge and skills for operationalising ICT tools would allow for more equal opportunities in collaboration as well as improving clarity and speed of communication.

5.4 Summary of Discussion

The discussion in this final section has centred on the changes educators need to undertake to ensure authentic, experiential learning opportunities can support students in developing skills beyond the simple to the complex domain for the global learning environment. Developing students’ higher-level skills of analysing, evaluating and synthesising knowledge is necessary to ensure they graduate with the ability to work in global virtual business teams, in order to meet the demand for this ability identified in the business literature.

The research has identified a larger role for educators, who are themselves located in multi-cultural and multi-temporal environments, to work as a global virtual team in order to collectively plan and design effective learning opportunities for students. The scaffolding and coaching needed for the establishment of this scenario is identified in Figure 1 as a
framework for authentic and experiential learning. This framework identifies the components educators need to consider when planning the scaffolding and coaching for the learning opportunity. The hypotheses captured in this framework are presented in the final conclusion.

![Planning and design framework for authentic and experiential learning to develop student competencies for global virtual teamwork](image)

**Figure 1** Planning and design framework for authentic and experiential learning to develop student competencies for global virtual teamwork
5.5 Conclusion

While previous studies have recognised that an authentic, experiential learning approach is effective for developing intercultural competencies, this research study found that merely providing an authentic, experiential learning opportunity is not sufficient for developing students’ intercultural competencies to the level at which they emerge with work-ready, transferable skills of communicating and collaborating effectively in global virtual teams. The complexities of developing authentic, experiential learning opportunities are increased exponentially by the geographic and cultural dispersion of both students and educators. In order to address these additional challenges, there is need for a more scaffolded and supported approach by educators, rather than the more traditional approach of individual learning by an individual educator. This adds a further level of (largely unexplored) complexity to both authentic and experiential learning design.

The research found that whilst the authentic, experiential learning opportunity assisted students to understand, apply and even analyse knowledge required for operating in global virtual teams, it also revealed that students had difficulties in acquiring higher levels of cognitive skills to enable them to evaluate their actions and create new procedures to assist with collectively making decisions and to collaborate together. Thus, the ability for students to be able to transfer the knowledge they acquired through the learning opportunity to new, real-world global virtual team applications requires greater scaffolding of their learning. Consequently, what is needed is change to the design of the authentic, experiential learning opportunity to further support students’ development of higher levels of cognition. This requires educators to move from a ‘silod’ approach where the educators predominately provided instruction and support to their own students, to a more holistic scaffolding and coaching approach which takes into consideration that each countries’ students are only one component of a larger multicultural, multitemporal team that needs to be collectively supported to learn and operate cohesively.

The culmination of these findings has been captured in a framework that provides components educators need to consider when planning and designing the coaching and scaffolding support for authentic, experiential learning opportunities designed to develop
global virtual team competencies. This planning and design framework for authentic and experiential learning of global virtual teamwork is founded upon the belief that educators themselves need to work as members of global virtual teams to scaffold a process that enables students to develop knowledge by enacting collective coaching and support. The framework provides further detail on how educators should coordinate coaching and support that encourages students to develop appropriate collaborative behaviours and guides students to evaluate the contribution of different technology to support their cross-cultural and cross temporal interactions. In this way, the framework aims to provide a mechanism for educators to meet the business challenge of preparing graduates for being effective members of global virtual business teams.

5.6 Limitations

This study was limited by the specific context in which it was conducted. The scope of the research was focused on one particular case that met the criteria for the study and the researcher acknowledges that a singular case can limit the variance in results (Yin 2003). Additionally, the singular case provided only a limited number of participants for the purposive sampling and as a result there was only 16 participants in the study. The limitations of studies with small number of participants was discussed in Chapter three.

5.7 Implications

The possibility for further research arising from these findings relies on ongoing testing of the processes within the entitled ‘Planning and Design Framework for Authentic and Experiential Learning’ to develop student competencies for global virtual teamwork. In proposing this further research, the researcher acknowledges that the proposed framework arose from the case study and is yet to be tested beyond this particular instance of analysis to illustrate the principles presented in this thesis.
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APPENDICES

Appendix A  Elements of authentic learning corresponding to experiential learning cycles. Extrapolated from Kolb (1984) and Herrington and Oliver (2000)

Appendix B  Questions for interview Part A

Appendix C  Questions for interview Part B

Appendix D  Case study participants’ responses indicating knowledge level of Bloom’s Taxonomy (1956) acquired for each of Kühlmann and Stahl’s (1996) intercultural competencies
### Appendix A: Intercultural Competencies Level Descriptors for Each Level of Bloom’s Taxonomy

<table>
<thead>
<tr>
<th>INTERCULTURAL COMPETENCIES (Kühlmann &amp; Stahl 1996)</th>
<th>BLOOM’S COGNITIVE TAXONOMY (Bloom 1956) levels and descriptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>For success on international assignments</td>
<td>Knowledge (remembering) Is aware of the basic intercultural behaviours, skills and attitudes required for intercultural communication and collaboration</td>
</tr>
<tr>
<td></td>
<td>Comprehension (understanding) Can recognise, describe and discuss the intercultural behaviours, skills and attitudes required for intercultural communication and collaboration</td>
</tr>
<tr>
<td></td>
<td>Application (applying) Can use intercultural behaviours, skills and attitudes required for intercultural communication and collaboration</td>
</tr>
<tr>
<td></td>
<td>Analysis (analysing) Questions the intercultural behaviours, skills and attitudes required for intercultural communication and collaboration and test new ideas for ICC</td>
</tr>
<tr>
<td></td>
<td>Evaluation (evaluating) Can critique, weigh up and justify a stand or decision around intercultural behaviours, skills and attitudes required for intercultural communication and collaboration</td>
</tr>
<tr>
<td></td>
<td>Synthesis (creating) Can construct and apply new intercultural behaviours, skills and attitudes for more effective intercultural communication and collaboration or original work: design, investigate, formulate, construct</td>
</tr>
<tr>
<td>Tolerance for ambiguity Functions effectively in a foreign environment where there is ambiguity, complexity and uncertainty</td>
<td>Recognises a complex situation but may be overwhelmed by ambiguous situations which imply high involvement</td>
</tr>
<tr>
<td></td>
<td>Can explain or interpret ambiguity and deal with it on a one-off basis, responding to items as they arise</td>
</tr>
<tr>
<td></td>
<td>Has a range of approaches to cope with ambiguities in low-involvement situations?</td>
</tr>
<tr>
<td></td>
<td>Begins to question complex situations and accept ambiguity as a challenge</td>
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<tr>
<td></td>
<td>Is constantly aware of the possibility of ambiguity and can make and defend judgements on how to deal with it.</td>
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<tr>
<td></td>
<td>Can assemble a range of ways to manage, when ambiguity occurs</td>
</tr>
<tr>
<td>Behavioural flexibility Can vary behaviour according to the immediate requirements of the situation and the demands of foreign culture</td>
<td>Recognises that working interculturally requires being more flexible</td>
</tr>
<tr>
<td></td>
<td>Knows they need to be flexible but is more reactive /defensive than strategic and deals with each situation in a one-off way</td>
</tr>
<tr>
<td></td>
<td>Based on previous experience of required behaviour begins to vary behaviour where necessary</td>
</tr>
<tr>
<td></td>
<td>Calculates when they may need to be more flexible and sometimes takes the initiative in adapting/ conforming to other cultures’ behavioural patterns</td>
</tr>
<tr>
<td></td>
<td>Can appraise a situation and be ready and able to adopt appropriate behaviour</td>
</tr>
<tr>
<td></td>
<td>Has a broad and well understood repertoire of ways to vary behaviour to generate more positive outcomes</td>
</tr>
<tr>
<td>Goal orientation Has the ability and desire to achieve one’s task goals despite barriers, opposition or discouragement</td>
<td>Is aware of task and project goals and the need to achieve them</td>
</tr>
<tr>
<td></td>
<td>Can identify what needs to be done and that strategies are required to achieve tasks</td>
</tr>
<tr>
<td></td>
<td>Employs strategies to achieve goals and produces some solutions to overcome barriers or discouragement</td>
</tr>
<tr>
<td></td>
<td>Identifies and analyses the barriers to achieving goals and calculates ways to still achieve goals</td>
</tr>
<tr>
<td></td>
<td>Makes judgements as to why goals are not being achieved and chooses new strategies</td>
</tr>
<tr>
<td></td>
<td>Generates and implements new approaches to maintain and achieve goals</td>
</tr>
<tr>
<td>Sociability and interest in other people Has a willingness to establish and maintain meaningful social relationships, combined with a genuine interest in other people</td>
<td>Has some interest in and has acquired some general knowledge of the foreign team members</td>
</tr>
<tr>
<td></td>
<td>Expresses interest in foreign team members and recognises their difference. Actively creates opportunities to connect and develop relationships.</td>
</tr>
<tr>
<td></td>
<td>Takes the trouble to find out about team members’ cultures and lives and pays attention not only to isolated facts but to values, customs and practices common in those cultures. Uses this</td>
</tr>
<tr>
<td></td>
<td>Distinguishes between the habits, preferences and interests of local and foreign team members and identifies new ways to improve relationships</td>
</tr>
<tr>
<td></td>
<td>Appraises the importance of the relationship in a new situation and selects the best response to maintain the relationship and achieve the outcome required. Seeks regular clarification within the group.</td>
</tr>
<tr>
<td></td>
<td>Has a deep understanding of the cultural and social needs of the group has a system of principles that can be rearranged reliably to maintain social and team relationships in almost any situation</td>
</tr>
<tr>
<td><strong>Empathy</strong>&lt;br&gt;Has the capacity to accurately sense other people’s thoughts, feelings and motives and to respond to them appropriately</td>
<td>Can identify the cultural foreigners’ differences but sees them more as curious, and sometimes strange</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>Non-judgementalness</strong>&lt;br&gt;Willingness to critically re-examine one’s own values and beliefs, and to avoid judging other people against one’s own norms</td>
<td>Recognises the need to avoid making judgements about other’s cultural ways but may still prioritise their own beliefs and norms</td>
</tr>
<tr>
<td><strong>Meta communication</strong>&lt;br&gt;Clarify culturally different perceptions and to sensibly ‘guide’ the intercultural communication process</td>
<td>Can identify problems caused by different cultural communicative conventions but still tends to hold on to own conventions and expects adaption from others</td>
</tr>
</tbody>
</table>
# Appendix B: Questions for Interview Part A

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age</td>
</tr>
<tr>
<td>2</td>
<td>Nationality</td>
</tr>
<tr>
<td>3</td>
<td>Parents’ Nationality</td>
</tr>
<tr>
<td>4</td>
<td>Friends from overseas</td>
</tr>
<tr>
<td>5</td>
<td>Languages spoken</td>
</tr>
<tr>
<td>6</td>
<td>Casual employment</td>
</tr>
<tr>
<td>7</td>
<td>Degree of experience working with other nationalities</td>
</tr>
<tr>
<td>8</td>
<td>Read foreign books</td>
</tr>
<tr>
<td>9</td>
<td>Watch foreign films</td>
</tr>
<tr>
<td>10</td>
<td>Listen to foreign music</td>
</tr>
<tr>
<td>11</td>
<td>Times travelled overseas</td>
</tr>
<tr>
<td>12</td>
<td>Places visited overseas</td>
</tr>
<tr>
<td>13</td>
<td>Length of each trip overseas</td>
</tr>
<tr>
<td>14</td>
<td>Purpose of each overseas trip (Study or work overseas?)</td>
</tr>
<tr>
<td>15</td>
<td>Any other intercultural influences/factors (i.e. host of exchange student)</td>
</tr>
</tbody>
</table>
## Appendix C: Questions for Interview Part B

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What elements of the virtual, global WIL project do you think were useful for improving intercultural communication skills?</td>
</tr>
<tr>
<td>2.</td>
<td>Did the ability to see each other and communicate face to face add anything to the team relationships or work outcomes?</td>
</tr>
<tr>
<td>3.</td>
<td>What might have been different if you only emailed each other?</td>
</tr>
<tr>
<td>4.</td>
<td>What role did technology play in the VGWIL?</td>
</tr>
<tr>
<td>5.</td>
<td>How did having a real, live industry project affect the learning outcomes particularly the development of business intercultural communication skills?</td>
</tr>
<tr>
<td>6.</td>
<td>Any other observations or comments?</td>
</tr>
</tbody>
</table>
# Appendix D: Case Study Participants’ Responses Indicating Knowledge Level of Bloom’s Taxonomy (1956)

Acquired for Each of Kühlmann and Stahl’s (1996) Intercultural Competencies

<table>
<thead>
<tr>
<th>INTERCULTURAL COMPETENCIES (Kühlmann &amp; Stahl 1996)</th>
<th>BLOOM’S TAXONYM (case study participants’ responses indicating knowledge level acquired for each intercultural competency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance for ambiguity</td>
<td>It was difficult learning how to work with people with different priorities and they all had breaks at different times and different university distractions. At one stage, there was no communications for three weeks. (P9, Interview 2)</td>
</tr>
<tr>
<td>Functions effectively in a foreign environment where there’s ambiguity, complexity and uncertainty</td>
<td>It gave me an insight into how others work, particularly the USA. How each country did research was very different. (P10, Interview 2, Q6)</td>
</tr>
<tr>
<td>Groupwork is hard as many members just don’t contribute or reply and was particularly hard in the 24 hour challenge. Had to manage people and slack members a lot. (P7, Interview 2, Q6)</td>
<td>People have different expectations of the quality of work required and what constitutes a timely submission. On occasions people perhaps didn’t deliver what was required or didn’t deliver at all. These would be common challenges faced in real working situations too. (P13, Reflection 2)</td>
</tr>
<tr>
<td>Behavioural flexibility</td>
<td>Learning to work with people who have differing levels of commitment to the project has been somewhat challenging. (P14, Reflection 2) We quickly learned that reliance on our Iowan and Dublin...apparent that we would have to use our own resources and imagination to create the campaign required, on top of tackling the challenge of working with teams from around the world. (P6, Reflection 2)</td>
</tr>
<tr>
<td>Can vary behaviour according to the immediate requirements of the situation and the demands of foreign culture</td>
<td>...we were really flexible with time and when we met – it felt like the USA were not very flexible. Conflicting due dates made it hard and each country had different due dates due to different times. (P2, Interview 2, Q6)</td>
</tr>
<tr>
<td>For members who have shown their lack of dedication, we gave small contributions, and for those with good initiative/interest we gave more significant parts. We also changed the pairing style, grouping inactive Kirkwood students to be clustered</td>
<td>...one teammate didn’t have Facebook and wasn’t being communicated to, however we did know this till much later and when we did we started to use Email. (P4, Reflection 2)</td>
</tr>
<tr>
<td><strong>Goal orientation</strong>&lt;br&gt;Has the ability and desire to achieve one’s task goals despite barriers, opposition or discouragement</td>
<td>Time management was difficult. Getting things done on time and getting everyone working around time zones is very difficult. (P12, Interview 2, Q6)</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>Sociability and interest in other people</strong>&lt;br&gt;Has a willingness to establish and maintain meaningful social relationships, combined with a genuine interest in other people</td>
<td>“I also have a strong interest in the differences between cultures. With this in mind, I am very excited to see what it is like to work in a professional environment with a team made up of three different cultural styles. (P13, Reflection 1)</td>
</tr>
<tr>
<td><strong>Empathy</strong></td>
<td>Everyone has their own strengths and weaknesses, different working styles, different ways of understanding things and different ways they have been taught or instructed to do things by their mentors. We have vastly different personalities throughout our group, particularly across the different countries. (P13, Reflection 2)</td>
</tr>
<tr>
<td><strong>Non-judgementalness</strong></td>
<td>Everyone in the other teams seems nice…Different, but nice. Different doesn’t mean bad? Bad doesn’t mean different. (P13, Reflection 1)</td>
</tr>
<tr>
<td><strong>Meta communication</strong></td>
<td>Even though all of our teachers told us MANY times ‘Even though we are all English speaking’</td>
</tr>
</tbody>
</table>

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**Empathy**
Has the capacity to accurately sense other people’s thoughts, feelings and motives and to respond to them appropriately

**Non-judgementalness**
Has a willingness to critically re-examine one’s own values and beliefs, and to avoid judging other people against one’s own norms

**Meta communication**
Clarify culturally different perceptions and to sensibly ‘guide’ the
**Intercultural Communication Process**

| Countries, we don't speak the same language, 'I really didn't comprehend this to be true until now. (P15, Reflection 1) | We discovered that the different personalities, opinions and writing styles often made it tough when completing stages of the major report. (P13, Reflection 2) | Communicated with Australians. I learnt how to change tone of communication to get different outcomes. (P7 Interview 2, open question) | Our teammates before were the probable reasons. However, later reflecting it is perhaps just a difference in communication styles. (P5, Reflection 1) | Team members, how to understand their expectations, cultural habits and ways. (P7, Reflection 3) |