PORTRAITS OF THE ACTIVITY SYSTEMS OF POSTSECONDARY INTERNATIONAL STUDENTS IN ONLINE LEARNING: FROM TENSIONS TO TRANSFORMATIONS IN ACTIVITY

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by

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ABSTRACT

The purpose of the study was to portray the activity systems of postsecondary international students enrolled in online courses in order to identify opportunities for positive transformations in the activity of learning. Data collection and data analysis were guided by Activity Theory (AT) and relied on individual interviews. The five students who participated in the study were speakers of English as an Additional Language enrolled at Memorial University of Newfoundland, Canada. Findings were reported as individual portraits of the activity systems of the students. Cross analysis of the portraits revealed the following themes: Asynchronous, Text-Based Interaction; Synchronous Interaction; Time and Place Flexibility; Social and Cultural Interaction; Teaching Presence; and Independent Learning. The themes were analysed in relation to AT's five principles. A more in-depth focus on the principle of contradictions or tensions supported the identification of opportunities for positive transformations in the activity of learning which included: students' preference for asynchronous interaction; inclusion of face-to-face and online synchronous interaction in online courses; inclusion of a greater variety of media; students' preference for independent learning; support and facilitation of independent learning; enhanced teaching presence; inclusion of first-language online resources; enhanced language-related services and supports; cultural inclusivity; social interaction; and networks of international and domestic students for social and cultural interaction.

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Chapter One

Introduction

Introduction

The purpose of this chapter is to present the study that forms the basis of this dissertation. The study takes place at the intersection of two trends in postsecondary education. On the one hand, postsecondary institutions are moving towards greater internationalization (Lee & Wesche, 2000), including efforts to recruit higher numbers of international students (Kim, 2010). On the other hand, postsecondary distance forms of learning such as online learning are becoming more common (Bryant, Kahle, & Schafer, 2005).

In Canada, the number of international students has more than doubled since 1998, to a total of 178,000 in the year 2008 (Foreign Affairs and International Trade Canada, 2009). Worldwide, between two and three million students travel to another country every year to study (Graddol, 2009). With regard to international students globally, it has been estimated that their numbers will surpass seven million by 2025 (Boehm, Davis, Meares, & Pearce, 2002).

At the same time as institutions are moving towards greater internationalization, postsecondary students are studying in technology-mediated contexts in which they are relying extensively on computers and the Internet as part of their learning. In a 2010 study of 127 postsecondary institutions in Canada and the United States, approximately

one-fifth of participants reported "taking all or some of their courses entirely online" (Smith & Caruso, 2010, p. 84).

The Problem

At the postsecondary level, there was an increase of 57% between 1999 and 2009 globally in the number of students studying outside of their countries (UNESCO Institute for Statistics, 2009). In Canada, the number of postsecondary international students has increased significantly in recent years. There were 48,000 full-time visa students enrolled in undergraduate programs in 2006, which represented more than three times the number of full-time visa students one decade earlier. In graduate programs, the number of students over the same period of time doubled from 11,000 to 22,000 (Foreign Affairs and International Trade Canada, 2009). As indicated by a 2007 report, visa students represented approximately 7% of full-time undergraduate students and almost 20% of full-time graduate students (The Association of Universities and Colleges of Canada, 2007). In the period between 1992 and 2008, some changes have been identified in the characteristics of international students at Canadian universities, such as a greater proportion of younger students and students enrolling in a first degree program (McMullen & Elias, 2011).

The increasing numbers of international students in postsecondary institutions are the reflection of a trend towards greater efforts to recruit these students (Kim, 2010; Lee & Wesche, 2000). In Canada, for example, the government announced in 2011 a significant investment in the promotion of the country as an education destination of

choice (Canadian Bureau for International Education, 2011a, b; Government of Canada, n. d.). As postsecondary institutions move towards greater internationalization and recruit higher numbers of international students (Lee & Wesche, 2000; Marginson & McBurnie, 2004), there is an increasing need to understand international students in postsecondary contexts of learning (Sawir, 2005).

At the same time as institutions are moving towards greater internationalization, postsecondary students are studying in technology-mediated contexts in which they are relying extensively on computers and the Internet as part of their learning. A 2005 survey of undergraduate students in 13 institutions in the United States revealed that their "highest computer use was in support of academic activities" (Kvavik, 2005, Hours of Technology Use section, para. 3). In a 2009 study of incoming students at an Australian university, almost 87% of participants indicated that they "frequently use online resources for study purposes" (Oliver & Goerke, 2007, Access section, para. 2).

In terms of research on postsecondary students' use of computers and the Internet for learning, studies have investigated their academic Internet use (e.g., Selwyn, 2008). Some studies have investigated postsecondary students' access to, use of, and experience with technology, with a focus on how it assists them in their studies (e.g., Kennedy et al., 2008; Smith & Caruso, 2010). Other studies have focused on classroom contexts of postsecondary education to investigate students' perceptions of the use of computers (e.g., Lowerison et al., 2006) or technology in general (e.g., Moseley, 2010) in their classes. Research has also been conducted in the area of library studies (e.g., Gardner & Eng, 2005).

More specifically, studies have also been conducted on international students using computers and the Internet for learning. These studies have investigated their attitudes towards technology (e.g., Lin, 2004), use of library-based technology (e.g., Howze & Moore, 2003), and needs related to information and communication technologies (e.g., Hughes, 2009; Mehra & Bilal, 2007). Other research has enquired into the relationship between international students' cultures and their preferences regarding interface design (e.g., Evers & Day, 1997) or their perceptions of the usability of tools (e.g., Adeoye & Wentling, 2007).

There have also been studies conducted in relation to online courses, with postsecondary students in general (e.g., Eom, Wen, & Ashill, 2005; Morris, Finegan, & Wu, 2005; Northrup, 2009; Wojciechowski & Palmer, 2005; Young & Norgard, 2006) and with international students specifically (e.g., Sheu, 2005; Zhao & McDougall, 2008). Some of these studies of international students have paid special attention to cultural issues (e.g., Al-Harthi, 2005; Shattuck, 2005; Walker-Fernandez, 1999). The online, web-based programs and courses investigated in these studies of postsecondary students differ from what is known as the "print" or "correspondence" model of distance education, which traditionally has not relied on online technologies (see Taylor, 1995; Taylor et al., 1993).

Some research on computer and Internet use by postsecondary students has been guided by Activity Theory (AT). AT has been described as a framework or descriptive tool (Nardi, 1996) providing "a unified account of Vygotsky's proposals on the nature and development of human behaviour" (Lantolf, 2006, p. 8). AT helps move away from

a focus on the "usability" of tools to their "sociability" (Barab, Schatz, & Scheckler, 2004). AT does not focus on humans in isolation, but on activity, or human practices and behaviours understood in a specific social setting (Parks, 2000), such as learning or work. When conducting research from an AT perspective, the focus is on analysing an activity system or systems, as opposed to individuals in isolation (Kuutti, 1996). The activity system is comprised of the components of subject, tools (instruments or artefacts), object, outcome, community, division of labour, and rules (norms) (see Cole & Engeström, 1993; Engeström, 1987, 1999).

In educational research, AT allows for a focus on the perspectives of students specifically (Brine & Franken, 2006), as opposed to privileging educators' perspectives. Benson, Lawler, and Whitworth (2008) also argued that AT "reveals the interfaces between e-learning [electronic learning] at the macro- (strategy, policy, 'campus-wide' solutions) and the micro-organisational levels (everyday working practice, iterative change, individual adaptation)" (p. 456). In educational studies, AT allows for a focus on contradictions as enabling learning or disabling it, depending on whether they are acknowledged and resolved or not (Nelson, 2002). Contradictions are not regarded negatively in AT, because they can result in transformation in practices. As Russell and Yañez (2003) noted, they "can, under the right conditions, become productive of expansive learning" (p. 357). AT has been used in postsecondary contexts to investigate the integration of online learning in face-to-face environments (e.g., Blin, 2004) as well as the design and implementation of online courses (e.g., Fåhræus, 2004; Morgan, 2008; Peruski, 2003).

Limited research has been conducted relying on the framework of AT and in relation to international students using computers and the Internet for learning (e.g., Brine & Franken, 2006; Nelson & Kim, 2001). The studies guided by AT that have investigated postsecondary students in general using computers and the Internet for learning (e.g., Basharina, 2005, 2007; Dippe, 2006) and also those investigating international students specifically (e.g., Nelson, 2002; Nelson & Kim, 2001) focused mainly on AT's principle of contradictions. The AT studies that have focused on international students specifically (e.g., Brine & Franken, 2006; Nelson & Kim, 2001) were conducted in relation to courses on academic English writing.

In research in particular on speakers of English as an Additional Language (EAL) and their computer and Internet use, the focus has tended to be on students in English language courses (Westberry, 2009), rather than on students immersed in courses more directly related to their areas of specialisation in their degree programs: "Little attention has been focused on the learning experiences of EAL students,… particularly in relation to eLearning within mainstream contexts outside of the field of language learning" (p. 43).

In terms of the educational studies that have been conducted to investigate international students using computers and the Internet for learning, some of these studies have focused on one particular linguistic or cultural group of international students, such as Chinese students (e.g., Thompson & Ku, 2005; Tu, 2001; Zhao & McDougall, 2008). In addition, researchers have tended to focus on cultural issues in particular (e.g., Adeoye & Wentling, 2007; Al-Harthi, 2005; Shattuck, 2005; Walker-Fernandez, 1999).

Although considering issues related to cultural difference might provide some insights into international students using computers and the Internet, it is important to consider as well students' institutional contexts of learning when investigating international students, as Zhou, Knoke, and Sakamoto (2005) noted. In the context of their study of "the myth of 'passive' East-Asian students" (p. 288), they warned against explaining students' behaviours in learning contexts based solely on reliance on cultural difference.

Given the growth in numbers of international students and the prevalence in postsecondary education of computers and the Internet in contexts like online learning, there is a need for research on international students in these contexts. The growth of online learning at the postsecondary level has been documented; for example, Allen and Seaman (2008) reported that over 20% of all higher education students in the United States were taking at least one online course in the fall of 2007. However, few studies have so far been conducted with a focus on international students specifically and their computer and Internet use for learning, including distance forms of learning, and even fewer of these studies have relied on the framework of AT. Use of an AT framework would provide an opportunity not only to fill in this gap but also to facilitate holistic and complex insights that can eventually help inform educational policy and practice and ultimately benefit the experiences of these students in postsecondary institutions.

Purpose of the Study

The purpose of this study was to portray the activity systems of postsecondary international students enrolled in online courses in order to identify opportunities for

positive transformations in the activity of learning. The specific objectives of the study were to:

1. Identify and portray the activity systems of five postsecondary international students enrolled in online courses;
2. Cross-analyse the portraits to identify themes;
3. Analyse the themes using AT's five principles, with a focus on contradictions and the identification of opportunities for positive transformations in the activity of learning.

Chapter Five focuses on the first objective. Chapter Six addresses the second objective and Chapter Seven addresses the third objective.

Overview of the Study's Methods

Data collection, data analysis, as well as interpretation and presentation of findings were guided by the framework of AT. The participants were international students enrolled at Memorial University of Newfoundland, Canada. The study focused on five individual international students who had completed online (web-based) courses and were speakers of EAL. Data collection relied on individual interviews with international students who had completed one or more courses delivered in that format. An interview protocol was designed for the study. The design of interview questions was guided by the activity system components of subject, tools (instruments or artefacts), object, outcome, community, division of labour, and norms (rules) (see Cole & Engeström, 1993; Engeström, 1987, 1999). Data analysis for each individual was guided

by a protocol for analysis developed for this study relying also on the components of the activity system. Findings were reported as individual portraits of the activity systems of the international students. Analysis of the portraits was conducted to identify themes. The themes were then analysed in relation to AT's five principles, with a focus on contradictions and the identification of opportunities for positive transformations in the activity of learning.

Significance of the Study

Findings of the study might inform the design and delivery of online learning opportunities in which international students participate. The findings might also help point to students' expectations related to their educational and cultural influences, for example their expectations about student and instructor roles, which instructional designers and instructors of online courses might want to consider.

The study's findings might help outline directions for further research on international students using computers and the Internet for learning in online courses. More specifically, the study provides an opportunity to explore how AT might be used to investigate subgroups of postsecondary students like international students in particular contexts, such as those involving online courses.

International Postsecondary Students: Defining the Term

The term "international students" refers to students who "have crossed borders expressly with the intention to study" (Organisation for Economic Cooperation and

Development, 2009, p. 311). The term "foreign students" can also be used to refer to these students. The following definition of the term applies to the international students who participated in the present study:

> International students are those who, for the specific purpose of pursuing their education, go to a country other than their country of residence or the country in which they were previously educated.... In Canada, this concept includes students who are not Canadian citizens and who do not hold a permanent residency permit in Canada. (Statistics Canada, 2009, p. 64)

The term "international students" is used in this study because it was commonly used in the Canadian postsecondary institution where the research was conducted, Memorial University of Newfoundland, as well as in the postsecondary education literature in North America and elsewhere. For the purpose of this study, the term international students does not include only "sojourner" students, in the sense that participation was not restricted only to international students who intended to return to their country of origin after completing a postsecondary program of study.

The identification of a student as "international student" in the particular research setting of the study, as in other postsecondary institutions, relates to the student's immigration status, in the sense that international students in the context of this study would have been issued a permit by the Canadian government for the purpose of studying at their institution of destination in Canada. These students can also be identified as students who pay international student university tuition fees, as opposed to domestic student fees.

Overview of Chapters

Chapter One introduces the study and identifies its purpose. The chapter presents a statement of the problem which outlines the rationale for the study. The study's purpose is then stated. A brief overview is provided of the study's research methods. The chapter then outlines its significance. Finally, the study's use of the term international students is explained.

Chapter Two presents the framework of AT which guided data collection and data analysis, as well as interpretation and presentation of findings. It also reviews studies which have been guided specifically by AT to study postsecondary students using computers and the Internet for learning. The chapter begins with an overview of AT. It describes the components of the activity system. It also describes the principles of AT. Next, the value of using AT in educational research on computers and the Internet is outlined, as well as its value in relation to studying international students in particular. The chapter then reviews some educational studies guided by AT which have investigated postsecondary students using computers and the Internet. It finishes by outlining the contribution of the present study in relation to its use of AT to investigate international students in online courses.

Chapter Three reviews studies of international students using computers and the Internet for learning, including online learning. The literature review includes 23 studies. Except for one, they were published after the year 2000. Previous studies (e.g., Evers & Day, 1997; Liu, 1997) were not included because the possibilities for computer and Internet use for students for learning have increased since the first years that followed the

advent of the Internet. The chapter also outlines the contribution of the present study in relation to other studies of international students in online courses.

Chapter Four outlines the study's methods. Information is provided on the context of the study, recruitment and selection of participants, data collection and analysis, individual student portraits, and member checking. In terms of data collection, the chapter presents the interview protocol used in the study as well as interview procedures. The description of data analysis in the study includes the protocol developed to guide coding of each interview transcript.

Chapter Five focuses on the first objective of the study, which was to identify and portray the activity systems of five postsecondary international students enrolled in online courses. Each portrait is also summarised according to the components of the activity system. The portraits rely as much as possible on the interviewees' own words. Two of the students are from China, one from India, one from Bangladesh, and one from Jordan.

Chapter Six addresses the second objective of the study, which was to cross-analyse the portraits of the activity systems of the international students to identify themes. The themes identified are as follows: *Asynchronous, Text-Based Interaction*; *Synchronous Interaction*; *Time and Place Flexibility*; *Social and Cultural Interaction; Teaching Presence;* and *Independent Learning*.

Chapter Seven addresses the third objective of the study, which was to analyse the themes using AT's five principles, with a focus on contradictions and the identification of opportunities for positive transformations in the activity of learning. The analysis

involves considering the themes in relation to AT's five principles: the activity system as the main unit of analysis; multivoicedness; historicity; contradictions; and expansive learning. The analysis focuses more extensively on expansive learning. It highlights how students' learning could be expanded and transformed to overcome contradictions and to envisage a broader or wider range of possibilities.

Chapter Eight presents conclusions of the study. It also outlines the study's limitations in relation to participants, data collection, and the use of AT in the study.

Summary of the Chapter

Given the growth in numbers of international students and the prevalence in postsecondary education of computers and the Internet in contexts like online courses, there is a need for research on international students in these courses. However, the review of the literature conducted for this study uncovered limited research with that particular focus. It uncovered even less of this type of research relying on AT. Use of an AT framework would provide an opportunity to fill in this gap and to facilitate holistic insights that can eventually help inform educational practice and policy and ultimately benefit these students.

The purpose of this study was to portray the activity systems of postsecondary international students enrolled in online courses in order to identify opportunities for positive transformations in the activity of learning. The specific objectives of the study were to: 1. Identify and portray the activity systems of five postsecondary international students enrolled in online courses; 2. Cross-analyse the portraits to identify themes; 3.

Analyse the themes using AT's five principles, with a focus on contradictions and the identification of opportunities for positive transformations in the activity of learning. Chapter Five focuses on the first objective. Chapter Six addresses the second objective and Chapter Seven addresses the third objective. The study focused on individual international students who had completed online courses. The students were speakers of EAL. Data collection and data analysis were guided by AT and relied on individual interviews. The participants were international students enrolled at Memorial University of Newfoundland, Canada. Findings were reported as individual portraits of the activity systems of the students.

Findings of the study might inform the design and delivery of online learning opportunities in which international students participate. The findings might also help point to students' expectations related to their cultural and educational influences, for example their expectations about student and instructor roles, which instructional designers and instructors of online courses might want to consider. The study's findings might help outline directions for further research on international students using computers and the Internet for learning in online courses. More specifically, the study provides an opportunity to explore how AT might be used to investigate subgroups of postsecondary students like international students in particular contexts, such as those involving online courses. The purpose of the next chapter is to present the framework of AT which guided the study and to review research which has relied on AT to study postsecondary students using computers and the Internet for learning.

Chapter Two

Activity Theory: Framework and Literature Review

Introduction

The purpose of this chapter is to present the framework of AT which guided data collection and data analysis as well as interpretation and presentation of findings. Its purpose is also to review studies which have been guided specifically by AT to study postsecondary students using computers and the Internet for learning. The chapter begins with an overview of AT focusing on how this framework has been defined. It describes the components of the activity system and the principles of AT. Next, the value of using AT in educational research on computers and the Internet is outlined, as well as its value in relation to studying international students in particular. The chapter then reviews some studies guided by AT which have specifically investigated postsecondary students using computers and the Internet for learning, including AT studies focusing on international students. It finishes by outlining the contribution of the present study in relation to its use of AT to investigate international students in online courses.

Activity Theory: An Overview

AT provides a "powerful sociocultural lens through which we can analyse most forms of human activity" (Jonassen & Rohrer-Murphy, 1999, p. 2). AT is also known as Cultural-Historical Activity Theory or CHAT. It is not a theory in the sense of a predictive theory (Nardi, 1996). AT emphasises discovery rather than prediction

(Roebuck, 2000) and processes over outcomes (Basharina, 2007). As Blin (2004) explained, it is not a theory as understood in the usual sense, because it does not systematically allow us to predict phenomena, processes, or outcomes.

AT does not focus on humans in isolation, but on activity, or human practices and behaviours understood in a specific social setting (Parks, 2000). The term "activity" originally refers to "doing in order to transform" (Kuutti, 1996, p. 41). As Kuutti also noted, AT "studies human practices as developmental processes, with both individual and social levels interlinked at the same time" (p. 52). In this respect, AT has been referred to as a "unified theory" of the "dialectic link between individuals and social structures" (Lantolf & Genung, 2002, p. 176). Russell and Yañez (2003) referred to AT as fitting within views of learning that "see context as a weaving together of people and their tools in complex networks" (p. 336). They further explained: "The network is the context.... Activity theory tries to make sense of these networks of human interactions by looking at people and their tools [and] calls these networks activity systems" (p. 336).

AT has been described as "one of many social approaches to learning" (Russell & Yañez, 2003, p. 335). Kaptelinin (1996) commented that AT is one of the versions of the contextual approach, as opposed to the cognitive approach, to studying computer-mediated activity, and it is premised on the idea that "both human beings and computers develop in the process of cultural history and can be understood only within a social context" (p. 46).

The Activity System and its Components

The activity system. The "socially distributed activity system" (Engeström, 1991) is the unit of analysis in AT. Engeström (see Cole & Engeström, 1993; Engeström 1987) formulated a model of the structure of an activity system which is depicted in Figure 1. The model uses a triangle to reflect the activity system's interacting components. In enquiry guided by the framework of AT, as Russell (2001) explained, "the activity system—not the individual—is the basic unit of analysis for both cultures' and individuals' psychological and social processes, including learning" (p. 67). The activity system is comprised of the interacting components of subject, tools (instruments or artefacts), object, outcome, community, division of labour, and rules (norms) (see Cole & Engeström, 1993; Engeström 1987). As Russell (2001) explained, "any time a person or group (subject) interacts with tools over time on some object…to achieve some outcome, one can analyze their interactions as an activity system" (p. 67).

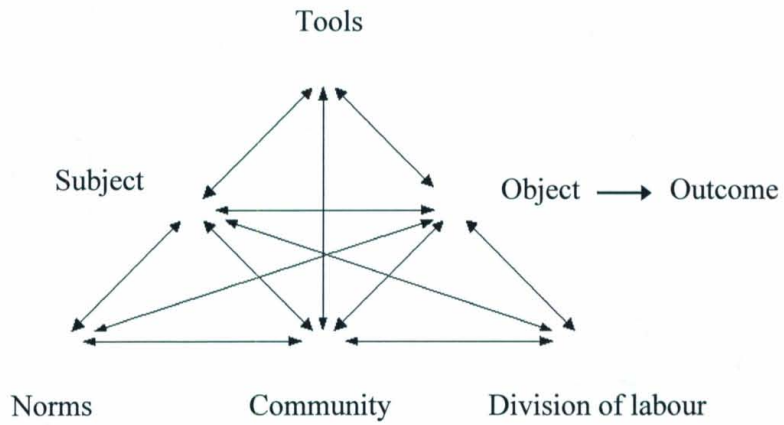


Figure 1. Components of the activity system (adapted from Engeström, 1987)

In research guided by AT, the activity system provides a starting point for analysis. A description of an individual's activity system helps provide contextualisation, as illustrated by Fåhræus' (2004) portrayal of the activity system of the distance education student in the context of his research:

> I have… chosen to regard the student as the subject in my analysis. The object of the student's activity is studies, and the desired outcome is to manage the studies in order to pass an exam. The instrument [tools] can be lessons, course material, a pedagogic method, and/or technology. The student belongs to a community of students, but here are also the teacher, the family and other important people. (pp. 132-133)

Subject. The subject of an activity system (see Figure 1) is the individual or group whose viewpoint is adopted in the analysis (Engeström, 1990). Subject can be defined as "the 'who' of the activity system" (Wuori, 2009, p. 37). In a context of technology use where the viewpoint considered is that of an individual or group of individuals engaging with technology, the subject refers to "users' points of view" (Nardi, 1996, p. 95).

The focus on the subject in AT differentiates it from other theories such as distributed cognition. Halverson (2002) notes that, whereas distributed cognition uses the same theoretical language for both people and artefacts (tools), in AT, the perspective of the individual or individuals who are the subject is "at the center of everything" and analysis of the individual is "situated in a social, cultural, historical, and artifactual world" (p. 248).

Object and outcome. Activity is directed toward an object. An object (see Figure 1) satisfies a need (Nardi, 1996). The object of an activity "gives it its determined direction" (Leont'ev, 1978, p. 62) and constitutes its motive. Object in an activity system refers to "the fundamental 'why' of the system" (Wuori, 2009, p. 38) and "the individual's purpose" (Bellamy, 1996, p. 124). It has also been described as "what is acted upon" (Barab et al., 2004, p. 27). An object can be material or it can be less tangible, such as a conceptual object like a plan (Jonassen & Rohrer-Murphy, 1999; Kuutti, 1996).

Kuutti (1996) notes that "an activity is a form of doing directed to an object, and activities are distinguished from each other according to their objects" (p. 27). The object precedes and motivates activity (Nardi, 1996). Nardi explains that the object "motivates activity, giving it a direction" (p. 73). According to Nardi, the fact that it is essential to consider objects when starting AT analysis distinguishes AT from other approaches to the study of technology that also emphasise context, such as situated action models. In situated action, "there is no definitive concept such as object that marks a situation" (p. 41), whereas focusing on the object in AT, in contrast, "gives the necessary attention to what the subject brings to a situation" (p. 44).

Engeström (1996) explains that object "refers to the 'raw material' or 'problem space' at which the activity is directed and which is molded or transformed into outcomes with the help of… tools" (p. 67). With respect to the outcome component (see Figure 1) in activity systems, Kuutti (1996) indicates that "transforming the object into an outcome

motivates the existence of an activity" (p. 27). Outcome refers to "the end result of the activity" (Yamagata-Lynch, 2010, p. 2).

In an educational context, for example, when considering learning activity in a course, as Russell and Yañez (2003) observe, the activity system produces outcomes, in the sense that "people are potentially different when they leave, one way or another, individually and perhaps collectively" (p. 339). There can be unintended outcomes when focusing on educational settings, such as, among others, possible dissatisfaction and failure in examinations (Morgan, 2008). An illustration of the components of object and outcome is provided by Bellamy (1996) with respect to education at the school level in general: "The object of the education system is learning.... The outcome of the activity is educated students" (p. 126). As Engeström and Sannino (2010) argue, in an activity system, it is possible to distinguish between "the generalized object of the historically evolving activity system" and "the specific object as it appears to a particular subject, at a given moment" (p. 6). The former is related to societal meaning and the latter to the personal meaning of the individual or group of individuals whose viewpoint is being considered.

In an educational setting, students and their teachers or instructors can have different objects. The object in a course, from the instructor's perspective, might relate to learning the course subject matter, but individual students might have other objects in addition to that one or they might have objects that are actually different from it, such as fulfilling a degree requirement. In addition, it needs to be considered that objects are not immutable but can undergo changes (Nardi, 1996).

Tools. A key notion in AT is the role of mediational tools. Tools (see Figure 1) refer to "the 'how' of the activity system" and are "available to help us get the job done" (Wuori, 2009, p. 37). They are also referred to as "instruments" or "artefacts" in the AT literature. Human activity is mediated by tools, which can enable or constrain activity (Kuutti, 1996). Tools "mediate between the individual (the subject of the activity) and the individual's purpose (the object of the activity)" (Bellamy, 1996, p. 124). Tools "act as resources for the subject in the activity" (Yamagata-Lynch, 2010, p. 2). External, material tools (e.g., a textbook, a computer) and internal, symbolic, psychological tools (e.g., language), which are also referred to as tools for thinking (Kuutti, 1996), mediate the object of activity. Tools mediate relationships with others and ourselves and change those relationships. They are created and transformed during the development of an activity. They also carry with them a particular culture and history, and so they represent an accumulation and transmission of social knowledge (Kaptelinin, 1996; Kuutti, 1996).

Community. In AT, the subject is not considered as acting in isolation but is part of a community (Blin, 2005). The community component of the activity system (see Figure 1) has been described as "the social group that the subject belongs to while engaged in an activity" (Yamagata-Lynch, 2010, p. 2). Community refers to the participants, the "multiple individuals and/or sub-groups," who consider themselves as distinct from other communities (Center for Research on Activity, Development and Learning, 2003-2004, The Activity System section, para. 4). When the perspective adopted in an AT study is that of a group of individuals as subject of an activity system,

the community component of the activity system "represents stakeholders in a particular activity or those who share the same overall objective of an activity" (Mwanza, 2002, p. 64). Liaw et al. (2007) explain that the community consists of the individuals and subgroups "that focus at least some of their effort on the object" (p. 1908). The same teaching activity in an educational context may look different when seen from the point of view of different subjects in a community (Blin, 2005).

Division of labour. As Rizzo (2003) explains, "between the members of the community there needs to be a division of labour in order to achieve the object" (p. 1). The division of labour (see Figure 1) mediates between the community and the object in an activity system. The division of labour involves the division of tasks and roles among members of the community and the divisions of power and status (Kuutti, 1996). Bellamy (1996) indicates that division of labour refers to "how the activity is distributed among the members of the community, that is, the role each individual in the community plays in the activity, the power each wields, and the tasks each is held responsible for" (p. 125). For example, in the study of the activity system of a classroom in which technology was integrated into teaching and learning, Divaharan and Ping (2010) describe the division of labour as referring to the roles played by participants: "...the various supporting roles adopted by the students, teachers, and technicians to support the lesson" (Proposed Multi-level Activity Systems Approach section, para. 2). The division of labour refers to both the horizontal division of tasks between individuals and also the vertical division of power and status (Engeström, 1990). Blin (2005) explains that, in a

context of learning, a horizontal division of labour can involve collaboration between students within groups, as well as between groups, whereas a vertical division of labour would involve "individual students working independently under the teacher's guidance" (p. 260).

Norms. Norms (rules) refer to "explicit and implicit regulations" (Engeström, 1990, p. 79). Norms (see Figure 1) mediate the relationship between subject and community (Kuutti, 1996). Jonassen (2000) explains that they "constrain activity… [and] inherently guide (at least to some degree)… the activities acceptable by the community" (p. 103). At the school level, there may be norms, both explicit and implicit, "that govern… individuals…—for example, school rules concerning attendance, lesson times, appropriate dress" (Bellamy, 1996, p. 126). Terantino (2009) notes that, in AT, the understanding of norms extends beyond traditional classroom definitions, in the sense of "a set of behavioral expectations;" instead, they "broadly describe[…] the system's socially constructed/understood conventions" (p. 38). Hardman (2005) observes that norms in the classroom can be, for example, "directives for appropriate behaviour (such as putting up one's hand when answering a question, rather than shouting out) or could relate to how the teacher treats the children and expects them to treat each other" (p. 4). In the context of learning in an online course, norms could include the "assignment expectations, group guidelines, and general netiquette" (Morgan, 2008, pp. 31-32).

Principles of Activity Theory

Engeström (2001) formulated five principles of AT. The principles are not considered as strictly separated from each other, because "each principle is connected to various aspects of the entire activity" (Bates, 2008, p. 38).

Activity system as the unit of analysis. The first principle states that the main unit of analysis in AT is the activity system (Engeström, 2001). The activity system is used to guide analysis in AT studies. It is defined as "object-oriented" (Engeström, 1999, p. 19) human activity which is mediated culturally.

Barab et al. (2002) note that AT provides a "nonreductionist" perspective in that "it conceives practice (activity) as part of a system" (p. 80). In studies in educational contexts, AT's focus on the activity system as the unit of analysis, as opposed to just the student (Liaw et al., 2007), presents the advantage that individuals are considered within the system(s) of which they are part, rather than in isolation (Kuutti, 1996). For example, AT offers a perspective that does not focus only on the relationship between tools and their users when studying technology-mediated learning. It focuses instead on the activity system as a whole, with components such as norms that can influence use of tools. By using the activity system, with its norms and other components, the focus can be not only on the tools themselves, but insights can be gained into how they are used and even why they may not be used. As Westberry (2009) noted, AT helps move away from techno-centric views which "limit vision to the inherent properties of a tool and fail to understand its relationship with the surrounding context" (p. 300).

Multivoicedness. The second principle, multivoicedness, refers to multiple perspectives, interests, and traditions in an activity system, as members of the system "carry their own diverse histories" and the system itself "carries multiple layers and strands of history engraved in its artefacts, rules and conventions" (Engeström, 2001, p. 136). Multivoicedness can be a source of trouble and also a source of transformation in an activity system. As Akkerman (2006) notes, in a group, the diverse voices of the group members "react and inform each other" (p. 40). The group members will also bring voices that are "informed by a broader sociocultural context with a particular history" (p. 40).

Multivoicedness is associated with different perspectives on an object (Blin, 2005; Russell & Yañez, 2003). Russell and Yañez note that the object of an activity is "inevitably contested, negotiated" and "similarly, the tools, rules [norms], community and, division of labor are often perceived differently, and thus also resisted, contested, and/or negotiated—overtly or tacitly, consciously or unconsciously" (p. 341). Different subjects "construct the object and the other components of the activity in different, partially overlapping and partially conflicting ways" (Center for Research on Activity, Development and Learning, 2003-2004, The Activity System section, para. 6).

Historicity. The third principle is historicity. Examining the history of activity systems helps understand their problems and potential because "parts of older phases of activities often stay embedded in them as they develop" (Kuutti, 1996, p. 26). When considering a health care program or an educational program, for example, as Engeström

(2001) argues, "to make analytical sense of the situation, we need to look at the recent history of the activity systems involved" (p. 143). Engeström notes that "history itself needs to be studied as local history of the activity" which is being investigated and, also, more broadly, "as history of the theoretical ideas and tools that have shaped the activity" (p. 137). When considering the activity system of the teachers in an educational organisation such as a school, for example, the local history of their teaching within their school would be analysed, and the ideas and tools that have historically shaped teaching would also be considered when conducting analysis.

The principle of historicity and the fourth AT principle, contradictions, can be related. In educational contexts in which learning relies on technology, some of the contradictions that students experience can be understood by examining their histories of use of computers and the Internet for learning (see Thorne, 2000a, 2003). Their previous computer and Internet uses may facilitate contradictions, as reflected in Thorne's (2003) concept of students' cultures of use of tools related to Computer-Mediated Communication (CMC). This concept refers to "the historically sedimented characteristics that accrue to a CMC tool from its everyday use" (p. 40).

Contradictions. The fourth principle is contradictions. Barab et al. (2002) referred to contradictions as systemic tensions that can help understand innovation in activity systems. With respect to how contradictions are experienced, Russell and Yañez (2003) commented that "people are often at cross-purposes" (p. 341). Contradictions manifest themselves as "problems, ruptures, breakdowns, clashes" (Kuutti, 1996, p. 34).

Contradictions result in double binds in everyday practices (Engeström, Engeström, & Suntio, 2002) or dilemmas (Engeström, 1987), when an individual receives "two messages or commands which deny each other" (p. 174). Kärkkäinen (1999) referred to a dilemma as "a tension present in a participant's voice and thinking that manifests itself as hesitations, reservations, being 'in two minds' about things, inconsistent opinions, even arguing with oneself" (p. 112). As Kuutti (1996) explains, activities are "virtually always in the process of working through contradictions" (p. 34). As Nardi (1996) also notes in relation to contradictions, the elements of activity are dynamic and they change constantly as conditions change. Activity theory does not view contradictions in a negative sense but considers them "the motive force of change and development" (Engeström & Miettinen, 1999, p. 9).

The notion of contradictions provides an analytical tool to examine transformations in activity. Studying an activity system involves a search for the contradictions in the system. Contradictions can occur within one component of an activity system, between components of the system, or between the activity system and another external system to which it is related (Kuutti, 1996). Contradictions can enable learning or disable it, depending on whether they are acknowledged and resolved or not (Nelson, 2002). In a context of education, a contradiction may occur for students, for example, when a new tool such as a new technology is introduced into their activity system and clashes with an old element, such as the division of labour, for example in the sense of traditional instructor and student roles. If acknowledged and resolved, however, the contradiction might result in a positive transformation of learning practices.

Expansive learning. The fifth principle, expansive learning, "proclaims the possibility of expansive transformations in activity systems" (Engeström, 2001, p. 137). It refers to the potential for these transformations through "embrac[ing] a radically wider horizon of possibilities than in the previous mode of the activity" (p. 137). Expansive learning is premised, as Engeström notes, on the idea that "people and organizations are all the time learning something that is not stable, not even defined or understood ahead of time" (p. 137). Engeström further explains: "In important transformations of our personal lives and organizational practices, we must learn new forms of activity which are not yet there. They are literally learned as they are being created" (p. 138).

Expansive learning is related to the principle of contradictions, in that transformation can be brought about when contradictions are identified and resolved. Russell and Yañez (2003) note that contradictions "can, under the right conditions, become productive of expansive learning" (p. 357) and that they present a "constant potential for change…, for transforming… activity systems" (p. 340). They "profoundly condition… what individual teachers and students do (and do not do)—and what they learn (and do not learn)" (pp. 341-342). Nelson and Kim (2001) explain that what drives development is the "resol[ution] or transform[ation] of contradictions (instead of merely shifting them elsewhere), thus resulting in a change in the activity system" (p. 41). The double binds resulting from contradictions that individuals experience "can sometimes lead people to transform their activity, to expand their ways of knowing and acting with others—learning not by merely reacting but by expanding" (pp. 353-354).

Value of Using Activity Theory in Educational Research on Computers and the Internet

According to Russell (2001), because learning using computers is a cultural and social phenomenon, there is a need to examine "how people use cultural tools to teach and learn, to change and be changed, through… interactions with others" (p. 65). AT can help understand "how new technologies can affect educational change" (Bellamy, 1996, p. 126). It has also been argued that AT can provide a "richly descriptive" answer to the question "Why and how do people learn (or fail to learn) using computer networks?" (Russell, 2001, pp. 65-66). In this respect, AT is a "heuristic[; t]hat is, a way of finding useful questions to ask" (Russell & Yañez, 2003, p. 335).

In educational research on computers and the Internet, using an AT framework can help identify contradictions between the components of an activity system (e.g., Basharina, 2007; Fåhræus, 2004; Hardman, 2005; Russell & Schneiderheinze, 2005). It can also assist in identifying contradictions within one component of the activity system under study (e.g., Barab et al., 2002; Russell & Schneiderheinze, 2005). Finally, contradictions can be identified which take place between the system that is being studied and another interacting system (e.g., Basharina, 2007; Thorne, 2000a).

As Russell (2001) noted, the activity system provides a flexible unit of analysis or a lens that "allows us to train our gaze in different directions and with different levels of 'magnification' to help us answer the questions that puzzle us" (p. 67). He explained that "the world does not come neatly divided into activity systems" and it is therefore up to the researcher "to define the activity system based on the purposes of the research study"

(p. 67) in order to focus the theoretical lens that AT provides. As Thorne (2005) also argued, AT provides "a set of heuristics and tools that can (and should be) situationally adapted" (p. 395). AT can be used to focus on a learning or professional organisation, but it can be applied, as Russell explains, "more tightly," meaning that it can be used to focus on activity systems which "are part of a larger activity or institution, such as a course of study or a distributed learning design group" (p. 68).

Benson et al. (2008) noted, in relation to using AT to examine educational uses of technology, that this framework facilitates a consideration of the practices of individual students and educators. At the same time, it allows for a focus on the organisation of teaching and learning at a broader level: "AT reveals the interfaces between e-learning at the macro- (strategy, policy, 'campus-wide' solutions) and the micro-organisational levels (everyday working practice, iterative change, individual adaptation)" (p. 456). Buell (n.d.) made the same argument, explaining that AT is suited to examine shifts in educational practices, such as those brought about by technology, at the level of how teachers implement teaching practices in classrooms, while it can also be used at an institutional level "for engaging in collaborative reflection about directions for departmental or school-wide change" (p. 52). An AT approach highlights the benefit of extending analysis beyond the boundaries of the "focal event" (Thorne, 2000b) of classroom learning to consider interacting activity systems (e.g., Basharina, 2007; Benson et al., 2008; Lim & Hang, 2003).

As a unit of analysis, the activity system provides an opportunity to consider a subject's or multiple subjects' perspectives (Engeström & Miettinen, 1999). In AT

research on education, students as subjects are considered holistically, because elements of their educational context such as the division of labour, norms, and community are included in analysis. In their study of an online writing course in a New Zealand university guided by AT, Brine and Franken (2006) referred to the value of AT in educational research in that it allowed for a focus on the perspectives of students. They commented:

> The framework… allowed us to appreciate that different students' perceptions about and ways of carrying out activities were very different, that their perceptions can be volatile and subject to change, that some students readily adopt and share a teacher's purposes and enthusiasm for activities, while others continue to contest those. (p. 36)

Value of Using Activity Theory in Educational Research on International Postsecondary Students

Instead of adopting AT as a framework to guide research, studies of international students using computers and the Internet for learning have used other frameworks, such as Communities of Practice (e.g., Nguyen & Kellogg, 2005; Spiliotopoulos & Carey, 2005), and have also used concepts related to cultural difference and cultural identity (e.g., Al-Harthi, 2005; Shattuck, 2005; Thompson & Ku, 2005; Zhao & McDougall, 2008; Walker-Fernandez, 1999). These included studies using Hofstede's (1991) international difference dimensions, Hall's (1976) concept of low and high context cultures, and Holliday's (1994) host culture complex model. A study conducted by Tu (2001) relied on social presence, a construct derived from social psychology which has been applied to online learning. Research has also relied on concepts and theories used in information literacy and library studies (e.g., Hughes, 2009; Mehra & Bilal, 2007. These

studies are reviewed in the next chapter. The literature search undertaken for the present study identified only two studies (e.g., Brine & Franken, 2006; Nelson, 2002; see also Nelson & Kim, 2001) which have been guided by the framework of AT to study international students using computers and the Internet for learning. These studies are reviewed in the next section of this chapter.

AT allows for a focus on the student perspective (Brine & Franken, 2006). Adopting the point of view of the student is particularly relevant in research on international students. This is because some of the research on these students has been critiqued on the grounds that international students have been considered as a "blank sheet" (Sawir, 2005, p. 570) and little attention might be paid to their previous educational experiences (Robertson, Line, Jones, & Thomas, 2000; Sawir, 2005).

In addition, using the AT lens of contradictions in particular can be appropriate for studies of international students because it can help move away from what has been identified as an over fixation on "difficulties" and "problems" in the literature on these students. Biggs (1997) encapsulated this notion in his view of a "deficit model" in research on international students. The shift away from the individual student towards a consideration of the student in the context of an activity system is valuable in this regard, because, as Peruski (2003) explains, AT "view[s] conflict as not so much rooted in the personalities of individuals,… but as rooted in the systems in which individuals are a part" (p. 158).

Use of AT to examine computer and Internet use contrasts with approaches in educational research which tend to focus on one classroom setting, event, or learning

task. In Basharina's (2007) and Morita's (2004) research, which was conducted specifically in the context of second-language learning with postsecondary students, the authors referred to use of AT as being inscribed within a shift from product-oriented to process-oriented research. Viewing learning as activity allows us to appreciate the complexities of sites of learning. AT can contribute to a fuller understanding of contexts of learning as related not only to academic, institutional settings, but also to the historical, social, and cultural settings in which international students engage in learning activity with other people and with tools such as computers.

Studies of Activity Theory and Postsecondary Students Using Computers and the Internet for Learning

Examining students' histories of use of computers and Internet communication tools (Thorne, 2000a) can help understand the contradictions they experience when using computers and the Internet for learning. Findings of Thorne's (2003, see also 2000a) study of computer-assisted classroom discussion in French university classes showed that students' relationship with tools such as computers in learning settings may facilitate contradictions, as highlighted in Thorne's (2003) concept of students' cultures of use of tools, or "the historically sedimented characteristics that accrue to a CMC tool from its everyday use" (p. 40). The purpose of Thorne's study was to analyze whether Internet mediation of language-based social interaction changed the activity of communication in the French language. The students in his research were studying French at a university in

the United States. Data collected were transcripts of online interaction, interviews, and observations.

Thorne's (2000a) study addressed students' histories of use of technology, in particular the Internet. One focus of the analysis in his study was "in-class digital interaction within the larger context of participants' prior and everyday uses of internet communication tools" (This Study section, para. 2). Findings revealed the interaction of students' prior participation online in non-academic settings with their perception of the affordances and constraints of online communication in the context of their French language classes. Some of the students' comments referred to perceiving "less supervision, seemingly" (On the Margins section, para. 1), while being aware that the instructor might be online at the same time. They also felt "less culpability," as illustrated by one student who referred to being able to tell jokes to others and "not see their faces" (On the Margins section, para. 1).

The adoption of an AT perspective to investigate students' histories and use of technology provided insight into the "language acculturation process" (Thorne, 2000a, Summary and Conclusions section, para. 1) that students had undergone in online communities, outside of their online participation in language classes. As Thorne noted, CMC "encourages users to develop communicative tactics that include an increase in personal addresses [and] the use of discourse markers to illustrate the continuance of a conversational thread (Summary and Conclusion section, para. 1). The approach in Thorne's study to considering students' histories of use of tools helped gain insight into

the relationship between use of technology for activity in an educational setting and beyond that setting, in non-academic contexts.

The different cultures of use of Internet communication that students bring with them can be a source of contradictions, as illustrated in Thorne's (2000a, 2003) and also in Basharina's study (2007; see also 2005). Basharina identified contradictions experienced by postsecondary students in online asynchronous communication in an online collaboration project involving 52 students from Japan, 57 from Mexico, and 46 from Russia who were learning English. Data collected for the study included students' asynchronous online interactions, interviews, and surveys. The study focused on contradictions between components of the students' activity system. It also examined contradictions between interacting systems, which were related to students being "embedded in their local classrooms, an online global community, and broader contexts of their local cultures" (p. 95).

In the email exchanges between the Japanese, Mexican, and Russian students of English, Basharina (2007) identified contradictions resulting from students' histories in contexts of technology use. Whereas the project relied on asynchronous communication through e-mail, some students were used to synchronous communication through chat, outside of academic contexts, and they preferred it to email because of its immediacy. This preference was reflected in students' engagement in the English email exchange project in a "desire to approximate delayed bulletin board interaction to… immediate response" (p. 94). In addition, the fact that in some cases they were using email

informally, like chat, highlighted that students were "transfer[ring] their model of engagement with synchronous chat to asynchronous interaction" (p. 97).

Findings of Basharina's (2007) study showed that an AT approach to the study of learning supported by technology can highlight how diverse educational influences may relate to students' online activity. In her study, an "inter-cultural" contradiction manifested itself as a "genre clash" among groups of students. Russian students wrote emails in the form of academic essays whereas Mexican and Japanese students conceived of email use as spontaneous. The Russian students' writing practices in the discussion forum could be characterised as "writing beforehand", whereas the Mexican students were "writing at the moment" (p. 92). In addition, these "misalignments" in cultures of use of tools paralleled misalignments in traditions of education. For the Russian students, the object of practicing writing skills in the telecollaboration project was defined by their instructor, influenced by her educational setting, as "academic essay writing activity" (p. 96). For the two other groups of students, however, it was defined as "interactive activity" (p. 96).

Basharina (2007) interpreted that these differences in turn related to a curricular versus an interactive educational paradigm. As she explained, these findings suggest that working towards a certain minimum alignment of cultures of use might be crucial for the success of collaboration projects at a distance using technology which involve students from different backgrounds. This need is highlighted when considering the author's recognition that inter-cultural contradictions in her study "remained unresolved and resulted in forming negative attitudes among some students" (p. 98). One example

related to the perception that developed among the Mexican students that the Russian students might have engaged in plagiarism when they wrote their postings. They formed this view "because of the formal, dispassionate and academic genre of the Russian students' messages" (p. 92).

Blin's (2004, 2005) study also focused on contradictions, which were referred to as "systemic tensions" in her research. She examined the design of syllabi for two French university technology modules and their implementation at an Irish university. Participants were two classes with 19 students in each. Her study was designed to "investigate learner autonomy in CALL [Computer-Assisted Language Learning]-mediated language learning environments" (Blin, 2004, p. 7). Data collected included course artefacts created by students such as student diaries. One tension that Blin identified related to an oral comprehension activity that required students to work in small groups, whereas they preferred to work independently. Students had previous experience with a standard second language certificate examination where the oral component was an activity carried out individually and answered in the mother tongue. This experience clashed with the demands of the new "more culturally advanced" (p. 166) form of aural comprehension, because students were "approach[ing] the new task with old habits" (p. 167).

In Brine and Franken's (2006) study, "the use of activity theory [was] considered in the evaluation of a web based academic writing course in a New Zealand university" (Students' Perceptions section, para. 1). Participants were 120 students enrolled in a first-semester, first-year, online academic writing and research skills course. Data for the

study consisted of diary entries that students posted online for instructors. The study relied on a set of guiding questions for AT research that the authors derived from Jonassen and Rohrer-Murphy's (1999) work. Brine and Franken identified challenges in the course in relation to group processes and how new communication tools facilitated or impeded these processes. Findings related to course group assignments using asynchronous communication identified Chinese students' "internal conflict" (An Alternative Activity System? section, para. 4) in relation to the requirement to respond online to the work of others, because of concerns about offending other students. As a result, some students expressed a preference for individual work over online group work. Brine and Franken interpreted that the students' "internal conflict" was caused by the imperative in their culture to maintain group harmony.

The findings of Dippe's (2006) research also highlighted students' perceptions of online interaction. Dippe reported on two studies conducted to investigate a new blended (online and face-to-face) nationwide distance program for teaching professionals in Sweden. Of the 803 students registered in the program, 152 responded to a web-based survey in the first study. In the second study, a paper-based questionnaire was sent to 743 students (after students were excluded who had not passed at least one course). A total of 434 students completed the questionnaire. The question guiding the research was as follows: "What practices and contradictions for the students and the teachers emerge due to the design characteristics of the… programme?" (p. 2). The study found that, from students' perspective, there was variation among the online instructors of the program in terms of how much they participated in course discussions. A "conflict" that was

identified related to instructor presence versus absence in online discussions. The students who experienced what they perceived as instructor "absence" in their discussion forums felt "abandoned" when "there was no interlocutor for student questions, no discussion partner or any online guidance" (p. 7). Dippe commented on the conditions under which the program was offered as relating to the dissatisfaction of students who perceived their instructors as absent: "There was pressure on the teachers to teach the courses but there was no corresponding pressure directed at changing the teachers' responsibilities and the knowledge of how to use online environments in learning and teaching" (p. 6).

AT can help identify whether contradictions that students experience remain unsolved (e.g., Basharina, 2007) or result in changes in practices (e.g., Nelson & Kim, 2001; Nelson, 2002). In his doctoral dissertation (Nelson, 2002) and a conference paper (Nelson & Kim, 2001), Nelson reported on a study that analyzed how 10 first-year international students learned to write in an English as a Second Language (ESL) composition and rhetoric course which relied on use of technology. The students were studying in a university in the United States. Data collection included various sources, such as student surveys and interviews, students' online learning records, and students' observations of those records. Data analysis involved a focus on each student individually, in order to develop a thick description of their perspectives, followed by comparison of students "for uniqueness and commonality of patterns" (Nelson, 2002, p. 69).

Nelson and Kim (2001) described the purpose of their study as seeking to examine: the usefulness of AT in understanding students' appropriation of concepts and tools of rhetoric and self-evaluation; how those tools mediated their learning to write; and how contradictions in the class led to changes in the activity system. In terms of how contradictions led to change, Nelson and Kim focused on students' appropriation of the concepts they learned to the extent that, for example, two students expanded and generalized concepts learned through use of the online learning record to non-academic contexts. Students learned concepts related to argumentative writing in the course, one of which was "connecting with readers." One student applied this concept, which she had learned in the context of the course, to her everyday interactions with friends and relatives, for the purpose of helping her express personal opinions.

The findings of Nelson and Kim's (2001; see also Nelson, 2002) study also highlighted the importance of students' previous educational and social influences, including family influence. Influences related to the students' previous educational and family histories, as well as present influences related to students' perceptions of the goal of university study and grades, resulted in different engagement in the course which was the focus of the study. The course was supported by use of technology. A Cypriot student and a Japanese student had similar teacher-centered educational backgrounds and limited computer and writing experience. However, they were influenced by different sociohistorical histories which eventually related to their achievement in the course. The Cypriot student strove for an A grade whereas the Japanese student strove for a passing grade. The Cypriot student was influenced by what she identified as the push in her

home country to seek a Master's degree and a desire, fostered by her family, to pursue doctoral studies. Nelson interpreted that there was a sociocultural difference between the two students related to "how higher education was valued by their respective societies" (p. 53). The Japanese student's previous university experiences did not value high grades as much as the other student because "higher education in Japan is not considered by many students to be primarily a time of studying" (p. 53); they might focus more, for example, on socializing, pursuing personal interests, and networking, with a view to the future.

The studies reviewed in this section highlighted the in-depth insights that can be gained into postsecondary students' use of computers and the Internet for learning through a consideration of AT's principles of historicity and contradictions. The focus on historicity and contradictions in the studies also provided insights into interactions between students' activity systems of learning and other activity systems which might influence their technology-supported learning, such as those related to: their prior cultures of use of computers and the Internet (e.g., Basharina, 2005, 2007; Thorne, 2003); prior learning experiences (e.g., Basharina, 2005, 2007; Blin, 2004, 2005); as well as family and cultural influences (e.g., Brine & Franken, 2006; Nelson, 2002; Nelson & Kim, 2001).

The Contribution of this Study in Relation to its Use of Activity Theory

A very limited number of studies of international students using computers and the Internet for learning have relied on an AT framework. Those that have been

conducted using AT (e.g., Brine & Franken, 2006; Nelson & Kim, 2001) have tended to focus on a specific subject area, English language courses for international students. In research in particular on speakers of EAL and their computer and Internet use for learning (e.g., Brine & Franken, 2006; Nelson, 2002; Nelson & Kim, 2001; Nguyen & Kellogg, 2005; Spiliotopoulos & Carey, 2005), the focus has tended to be on students in English language courses, as Westberry (2009) noted: "Little attention has been focused on the learning experiences of EAL students,… particularly in relation to eLearning within mainstream contexts outside of the field of language learning" (p. 43).

The present study provided an opportunity to use the framework of AT to gain holistic insight into international students' learning in online courses identifying opportunities for positive transformations in activity. The study's focus was not restricted to particular subject areas or courses, such as English language courses in which international EAL students participate to fulfil requirements for admission into a postsecondary program. The focus was instead on international students in online courses that they were taking as part of their degree programs.

The studies guided by AT that have investigated postsecondary students in general using computers and the Internet for learning (e.g., Basharina, 2005, 2007; Dippe, 2006) and also those investigating international students specifically (Nelson, 2002; Nelson & Kim, 2001) focused mainly on AT's principle of contradictions in relation to students' learning. Interpretation of findings in the present study focused not only the AT principle of contradictions but on the other AT principles as well. Only one other AT study of international students which used individual students' portraits was identified

(e.g., Flavell, 2004). However, its focus was not on postsecondary online courses but on essay writing in a graduate business face-to-face course and Mathematics problem solving in a secondary face-to-face course.

Summary of the Chapter

Data collection, data analysis, and interpretation and presentation of findings for the study were guided by the framework of AT. AT focuses on activity, or human practices considered in a specific social setting (Parks, 2000), such as learning or work. In AT, the point of a view of an individual or group of individuals is adopted. Engeström (2001) formulated five principles of AT: the activity system as the unit of analysis; multivoicedness; historicity; contradictions; and expansive learning. The activity system is used to guide analysis in AT research. It is comprised of the interacting components of subject, tools (instruments or artefacts), object, outcome, community, division of labour, and rules (norms) (see Cole & Engeström, 1993; Engeström 1987).

The second principle, multivoicedness, refers to the multiplicity of perspectives, interests, and traditions in an activity system (Engeström, 2001). The third principle, historicity, refers to examining the diverse histories that individuals carry with them and the history of the activity systems of which they are part. With respect to the fourth principle, AT views activity systems as characterized by contradictions. Contradictions result in dilemmas or double binds in everyday practices (Engeström, 1987). Activity theory does not view contradictions in a negative sense, as they can result in change in practices (Engeström & Miettinen, 1999). The fifth principle, expansive learning, refers

to the potential for expansive transformations in activity systems through the resolution of contradictions (Engeström, 2001).

A very limited number of studies of international students using computers and the Internet for learning have relied on an AT framework. Those AT studies (e.g., Brine & Franken, 2006; Nelson & Kim, 2001) tended to focus on a specific subject area, English language courses for international students. In research in particular on speakers of EAL and their computer and Internet use for learning (e.g., Brine & Franken, 2006; Nguyen & Kellogg, 2005; Spiliotopoulos & Carey, 2005), the focus has tended to be on English language courses (Westberry, 2009). The present study provided an opportunity to use the framework of AT to gain holistic insight into international students' learning in online courses identifying opportunities for positive transformations in activity. The study's focus was not restricted to particular subject areas or courses, such as English language courses. The focus was instead on international students in online courses taken as part of their degree programs.

The studies guided by AT that have investigated postsecondary students in general using computers and the Internet for learning (e.g., Basharina, 2005, 2007; Dippe, 2006) and also those investigating international students specifically (Nelson, 2002; Nelson & Kim, 2001) focused mainly on AT's principle of contradictions in relation to students' learning. The present study will consider not only the AT principle of contradictions but the other AT principles as well. Only one other AT study of international students using individual students' portraits was identified (e.g., Flavell, 2004). However, its focus was not on postsecondary online courses but on essay writing

in a graduate business face-to-face course and Mathematics problem solving in a secondary face-to-face course. The purpose of the next chapter is to review studies of international students using computers and the Internet for learning and to discuss the contribution of this study.

Chapter Three

Literature Review

Introduction

The purpose of this chapter is to review studies of international students using computers and the Internet for learning, including online courses, and to discuss the contribution of this study. The literature review includes 23 studies. Two additional studies of international students using computers and the Internet for learning (e.g., Brine & Franken, 2006; Nelson, 2002; see also Nelson & Kim, 2001) which were guided by the framework of AT were reviewed in the previous chapter.

Except for one study, the 23 studies reviewed in this chapter were published after the year 2000. Previous studies (e.g., Evers & Day, 1997; Liu, 1997) were not included because the possibilities for computer and Internet use for students for learning have increased since the first years that followed the advent of the Internet.

Only empirical studies were included in the review. Excluded were descriptions of programs or courses relying on computers and the Internet in which international students participated (e.g., Newberry, Lawson, Austin, Gorsuch, & Darwin, 2007). The university setting of the international students who participated in the present study was Anglophone, so the literature review included research on international students using computers and the Internet in Anglophone university settings and excluded research on these students in non-Anglophone university settings (e.g., Fengler, Wuttke, Henke, & Peukert, 2000). The review also excluded studies where the focus was on investigating

international students' uses of computers and the Internet in addition to, or other than, educational uses (e.g., Ye, 2006a, 2006b), such as for recreation and for socialising.

Studies in which the main focus was on comparing international and domestic students (e.g., Devlin, 2007; Gray, Chang, & Kennedy, 2010; Liao, Finn, & Lu, 2007; Martin, Maxey-Harris, Graybill, & Rodacker-Borgens, 2009; Song, 2004) were also excluded from this review, because the present study does not compare the two student groups. Some of the studies included did not specify whether the participants would have been considered international students in their institutions when the study was conducted, in the sense of being enrolled in a degree-granting program of study or having international student status, as opposed to, for example, another status such as immigrant or refugee. These studies, however, were included in the review because participants were already immersed in an educational experience at a postsecondary institution in an English-speaking country, as was the case for the international students in the present study.

Studies of International Postsecondary Students Using Computers and the Internet for Learning

This part of the chapter reviews studies that have investigated international students using computers and the Internet for learning. The studies are grouped according to the themes which constituted their research foci, as follows: culture; students' perceptions, attitudes, and experiences; social presence; information searching

and literacy; and community of practice. Then the commonalities in the findings of the studies are identified.

Studies Focused on Culture

One approach to studying international students using computers and the Internet for learning has been to focus on culture. This approach has been used in studies of international students and web-based (online) learning in particular. These studies have relied on interviews for data collection. In her doctoral dissertation, Walker-Fernandez (1999) reported on a hermeneutic study of the impact of the culture of graduate students on their experiences in a distance program at a university in the United States. She was interested in "whether education designed and provided by educators of different sociocultural backgrounds from that of the learners could be content relevant and instructionally appropriate" (p. xiii). She also explored whether that education "results in educational enhancement and/or prepares students to function adequately in their own communities" (p. xiii). Participants were 12 students from four continents registered at four universities in the United States who were taking online programs while they were living in their home countries.

Individual in-depth interviews were conducted in person and by email or using both methods. One of the lenses used to interpret interview data in Walker-Fernandez's (1999) study was transactional distance—the physical separation causing a psychological and communicative chasm which has the potential to cause misunderstandings in an educational event (Moore, 1991). Findings revealed that some of the sources of tension

related to uncertainty about expectations with respect to evaluation as well as miscommunication resulting from the asynchronous nature of the interaction. Students' perceptions of whether their learning needs were being met were influenced by their "cross-cultural encounters" (Walker-Fernandez, 1999, p. 175). Perceived cultural differences together with the transactional distance experienced by students hindered communication. Students also referred to the fact that either all or almost all of their required course resources, such as bibliographical references, were from the United States. As regards learning the subject matter of their courses, "many [students] worried about the fact that these resources were limiting their exposure to only one perspective – namely American" (p. 150).

Another study focusing on cultural issues was conducted by Goodfellow, Lea, Gonzalez, and Mason (2001) to investigate students enrolled in an online Master's program designed for professional educators offered by a university in the United Kingdom. Their focus was in particular on 32 students who identified themselves as "culturally and linguistically 'other'" (p. 70). The study relied on interviews to examine cultural and linguistic aspects of the design and delivery of the program. Findings of students' experiences were organised around the following topics: cultural otherness; perceptions of globality; linguistic difference; and academic conventions. In relation to issues related to using the English language in an online educational environment, students emphasized the time needed to write messages in discussions, the effectiveness of their arguments in the online medium, and their "presentation of self" (p. 78) through accurate language use in that learning environment.

In the context of doctoral research, Shattuck (2005) undertook a study that stated one of its research objectives as follows: "to provide thick, rich descriptions of insights of international adult students of the interaction of cultures in online distance courses designed and provided by an American university" (p. iii). The author was particularly interested in the impact of students' culture on their experiences in that educational context. Participants were ten students from Asian cultures and two from Middle Eastern cultures who were interviewed using online technologies. Shattuck interpreted findings related to students' perspectives of interacting cultures using Holliday's (1994) host culture complex model, which includes classroom cultures, student cultures, host institution cultures, professional-academic cultures, international education-related cultures, and national cultures. Some of the study's findings pointed to students' feelings of marginalization due to cultural differences.

Al-Harthi (2005) also investigated online courses with a focus on culture. She conducted a phenomenological study that relied on interviews with six graduate students from Arab Gulf States who were taking online courses in the United States. The study's purpose was to "provide cultural understanding" (Abstract section, para.1) about their education experiences. Its theoretical framework was guided by Hofstede's (1991) international difference dimensions and Hall's (1976) concept of low- and high-context cultures. To explain Hall's perspective on cultural differences, Al-Harthi noted that, in low-context cultures, "the explicit verbal utterance provides most of the meaning," whereas, in high-context cultures, "meaning is integrated within the environmental context and is dependent on non-verbal cues" (Cultural Differences section, para. 6).

Hofstede's international difference dimensions are as follows: small versus large power distance; high versus low uncertainty avoidance; individualism versus collectivism; and femininity versus masculinity, which refers to cultures favouring interdependence and service, privileging modesty and sympathy, versus cultures reflecting materialism and self-centeredness, favouring assertive behaviour. Themes identified through analysis of data in Al-Harthi's study were: the mandatory nature of the experience; the persistence of feelings of social shame in the online environment; English language difficulties; reduced participation; and avoidance of confrontation and aggravation of feelings.

Liu, Liu, Lee, and Magjuka (2010) conducted a case study investigating international students' perceptions of the impact of cultural difference on their experiences learning in a Master of Business Administration program delivered online by a United States university. Data sources were individual interviews with seven students and two focus groups with a total of 12 students. Participants perceived that there were cultural differences that manifested themselves in online learning but they also thought that they "did not negatively affect their communication or collaboration in learning" (p. 185). Issues such as language as a potential cultural barrier, plagiarism, time zone differences, and lack of multicultural content were considered as having implications for design of online instruction.

Adeoye and Wentling (2007) also focused on culture in a study investigating "possible relationships between national culture and the usability of an e-learning system" (p. 119). Participants were 24 international students from 11 countries studying in a university in the United States. The participants in the study were not skilled

computer users. Data were collected using three different instruments. The study relied on Hofstede's (1980) cultural dimensions and also on Nielsen's (1993) usability attributes of a computer system (learnability, efficiency, memorability, errors, and satisfaction). Learnability, for example, focuses on ease of learning. Some of the study's findings related to learnability and to Hofstede's dimension of low versus high uncertainty avoidance, which relates to the degree to which a society can deal with ambiguity and with tolerance for deviation from norms. Findings revealed a significant relationship between uncertainty avoidance and learnability. Participants with higher levels of uncertainty avoidance were likely to have higher scores for learnability time. Higher scores in learnability times were an indication that participants spent more time using the system, which the researchers interpreted as relating to "people with high uncertainty avoidance… feel[ing] threatened by risky or uncertain situations" (p. 139).

Shao's (2010) doctoral dissertation reported on a series of studies conducted with Chinese students. Shao was interested in the educational applications of a blog system in relation to cultural learning. His research project focused on exploring "the suitability, appropriateness and benefits of a mobile group blog in assisting overseas students to manage their culture shock" (p. ii). In the last study that Shao conducted, a previously designed mobile group system was used with 12 Chinese students newly arrived at a university in the United Kingdom. Data collection relied on observations, interviews, and focus groups. Students were loaned mobile phones to blog. The purpose of the study was to "determine how the mobile group blog could support those Chinese overseas students in real cultural learning in everyday life" (p. 134). Students moved from

blogging in Chinese to blogging in English. Their use of text in blog entries decreased over time, compared with use of images. Shao interpreted that students' increased English language use was indicative of their increased confidence and ability with the language, which "also suggested successful cultural transition" (p. 185). Students moved towards use of images because text was not the most suitable form of representation for mobile blogging. The mobile group "was proved to be an effective medium to enhance culture awareness and improve cultural transitions, as a result of learning in everyday life" (p. 185).

Studies Focused on Students' Perceptions, Attitudes, and Experiences

In other studies conducted on international students using computers and the Internet for learning, the purpose was not directly related to cultural issues, but to students' perceptions (e.g., Zhao & McDougall, 2008) and experiences (e.g., Thompson & Ku, 2005; Wang, 2006; Zhang & Kenny, 2010) in general. Cultural issues, however, were highlighted in some of the findings of these studies, together with other issues, such as linguistic ones. All of these studies relied on individual interviews and, in some cases, focus groups (e.g., Ku & Lohr, 2003), except for two studies which relied exclusively on questionnaire and survey data (e.g., Lin, 2004; Sheu, 2005). Interview data were used together with survey and online discussion data in Zhang and Kenny's research, and in combination with observations in Thompson and Ku's research. Ku and Lohr relied on a survey and a focus group to collect data.

The participants in Thompson and Ku's (2005) study were two Chinese graduate students from mainland China and five from Taiwan who were studying in a university in the western United States. Thompson and Ku investigated students' experiences in and attitudes to taking online courses. With respect to their findings, the authors commented: "All seven participants indicated that online learning was an interesting experience for them; however, they had mixed attitudes toward this unfamiliar mode of learning" (Abstract section, para. 1). The students identified advantages of taking online courses such as flexibility of time, as well as the advantage of having written discussions and course content available. Another finding was explained as follows: "Most… students felt more comfortable expressing themselves in discussion boards than in front of classes in traditional classrooms" (p. 41). However, Thompson and Ku also indicated with respect to the Chinese students that "their writing skills in English, insufficient and deferred feedback and the lack of cultural exchange were their major concerns regarding online learning" (Abstract section, para. 1). None of the students preferred taking courses delivered entirely online. They suggested that "a combination of online learning and face-to-face learning would be a better choice for them" (p. 43).

Wang's (2006) doctoral dissertation focused on six Chinese graduate students who had taken online courses at six universities in the United States. For the purpose of the study, an online course was considered to be one "having at least 75 percent of the instruction delivered through the Internet" (p. 86). The study investigated the students' experiences in that learning environment and also examined the sociocultural factors impacting their online learning. Wang focused as well on "how… Chinese students

negotiate cultural values and learning styles in their online learning" (p. 86). Data collection relied on in-depth, semi-structured interviews. Findings highlighted that the students' experiences in the online learning environment were shaped by "Chinese cultural values including collectivism, hierarchical relationships, conservatism and conformism, harmony-seeking, face-saving, and valuing effort and diligence" (Abstract section, para. 4). The students relied on learning community types of support for their learning. Their experiences also "include[d]… feeling more control over their learning [and] feeling a need to manage their learning" (p. 101).

Ku and Lohr's (2003) study of perceptions of graduate students of their first experience learning in an online course relied on a survey and a focus group. The authors also focused on students' attitudes, in the sense of their likes and dislikes in relation to online learning. The participants were two students from China and three from Taiwan. Findings revealed that students "liked the idea of building an online community among peers and instructors" (p. 100). Drawing on Hofstede's (1984) cultural dimensions, Ku and Lohr interpreted this desire as being related to the students' "collectivist-femininity cross-cultural value" (p. 100). In terms of language-related issues, it was easier for students to communicate in writing online as opposed to communicating through listening and speaking in face-to-face courses. At the same time, they would have liked "to have face-to-face interactions with American peers to improve their English and to learn more about American culture" (p. 101).

Zhao and McDougall (2008) also investigated the perceptions of online learning of Chinese graduate students. Their study relied on interviews. Participants were six

students in a Canadian university. Findings revealed their "positive attitude towards asynchronous online learning" (Chinese Students' Perceptions section, para. 1). The authors commented on findings related to issues associated with students' use of the English language: "Asynchronous, delayed communication gives the students more time to read, understand, and write a response… The text-based online discussion required only English reading and writing skills; listening and speaking skills are more difficult to master" (Fewer Language Barriers section, para. 2).

The students also reported participating more in discussions in online than face-to-face courses because they did not feel inhibition when writing. They also had more time to think about how to express their ideas and "the online situation allowed them to modify their personal characteristics and mitigated the effects of their traditional approaches to learning" (Zhao & McDougall, 2008, More Participation section, para. 1). In terms of disadvantages of asynchronous communication, the participants referred to lack of non-verbal cues and immediate instructor responses, which "made them feel less direct connection with the instructor and inhibited clarifying uncertainties" (Missing Non-verbal Clues section, para. 1). Some of the study's findings were reported in the form of six cultural factors related to the students' online learning, which were labelled as follows: "Unfamiliarity with the disciplinary culture;" "Ignorance of Western social life;" "Chinese cultural personality;" "Attitudes towards presenting opinions;" "High achievement motivation;" "Instructor's authoritative image."

Zhang and Kenny (2010) also conducted research in the context of a Canadian university on international students learning online. Whereas the larger study that was

conducted included 12 participants (see Zhang, 2007), in their 2010 paper, Zhang and Kenny reported on the experiences of three international graduate students in an online course. Data collection relied on an online survey, online observations, as well as email and telephone interviews. Findings indicated that "previous education and especially language proficiency strongly impacted the learning of these students in this environment" (p. 17). For example, students needed more time than in a face-to-face environment to participate in discussions because reading and writing in the online medium could be time consuming. Some findings related to the students' perceptions of social interaction in online courses: "Even though some course members thought a space for socializing was somewhat important, they did not perceive it as critical for their learning" (p. 28). While "the design and delivery of the online course were focused on what was familiar for local students" (p. 29), the international students lacked familiarity with North American references. Zhang and Kenny noted that, in the course that they studied, "students with strong English language proficiencies and Western cultural backgrounds tended to dominate the discussion forums" (p. 29).

Park (2006) took a phenomenological approach in a study investigating online learning. Data collection relied on interviews with ten Asian students studying in universities in the United States. The purpose was to "develop an inductive, comprehensive understanding of Asian international students' lived experience in online learning environments" (p. x). Data analysis was conducted with a focus on identifying themes. Some of the themes identified were the benefits and disadvantages of the online learning environment for the Asian students.

Benefits identified for the students related, for example, to their "control [of] time, place, and pace in their learning" (Park, 2006, p. 67). Disadvantages included aspects of online discussion, such as "unfamiliar discussion topics,... fewer responses,... pressure for well written and long messages,... requirements to talk and reply,... and overwhelming, but not worthwhile or useful messages" (p. 72). A theme emerging from data analysis related to language barriers experienced by the students in online learning. The students' cultural background was another theme identified in the study. It influenced, for example, how they worked in group projects. Students' suggestions for improving online learning related to "combining online and face-to-face" formats (p. 83), as well as using more multimedia and offering real-time communication with professors through online office hours.

Lin (2004) focused on international students and the English language in a study conducted at a United States university. Participants were 126 international students. The study took place in the context of doctoral work. It investigated whether students' ESL use was related to: their attitudes toward the use of technology for learning; their perceived levels of improvement toward technology integration; and their preferred technology training strategies. Demographic and other student characteristics were also considered in relation to the students' attitudes toward using technology for learning. Statistical analyses of questionnaire data indicated that students' attitudes toward ESL were positively related to their attitudes toward computers and also to their perceived computer skills improvement. Some of the other findings were that prior experiences in

ESL were not related to preferred strategy for computer training and that attitudes toward ESL did not impact students' preferred strategies for computer training.

In the context also of doctoral work, Sheu (2005) conducted a study to investigate international students' perceptions of online learning. The 134 participants who completed surveys for the study were studying at three universities in the United States. Descriptive and inferential statistical analysis of survey data was conducted. Results indicated that students emphasized the importance of interaction with the professor and other students in the online learning environment. Experience learning online was associated with willingness to take online courses. The undergraduate students were more likely than graduate students to take future courses online. The student characteristics that were considered, which were cultural background, educational values, language proficiency, and learning styles preferences, did not predict students' willingness to take online courses.

Studies Focused on Social Presence

In contrast with other studies reviewed in this chapter which used concepts or frameworks related to cultural identity and cultural difference, Tu's (2001) study relied on the construct of social presence. This is a construct derived from social psychology which has been applied to online learning. Tu investigated six Chinese graduate students enrolled in a college of education in the United States who were taking three different online courses. Data sources were informal conversation, interviews, observation, and document analysis. The purpose of the study was to investigate the students' perceptions

of social presence in relation to e-mail, bulletin board, and real-time chat. Research questions addressed how social contexts, web-based communication attributes, interactivity, and issues of privacy influenced the students' interactions.

To explain how the psychological construct of social presence was used to investigate Chinese students' perceptions of computer-mediated communication, Tu (2001) explained: "A medium with high social presence should be able to convey social context and provide two-way communication and interaction while a medium with low social presence will possess less ability to provide these aspects" (p. 49). The social context affects social presence. Tu's study was premised on Chinese students forming a High-Context Communication (HCC) group (Chen & Starosta, 1998), meaning that they collect information via non-verbal channels. Tu referred to the importance of this aspect of communication for Chinese students in relation to their perception of their online courses:

> Few emotions and feelings were expressed. Chinese students, being members of a high social context group, were unable to sense non-verbal channels, even though they knew the sender did not mean to be distant. Expression of emotions and feelings in online messages are very important to Chinese students. (p. 55)

Findings of Tu's (2001) study also revealed the importance of considering student expectations. For example, response times that were longer than students expected limited the level of social presence. In addition, because the students initially perceived discussions as formal, they needed a lot of time to create postings. Multiple threads were also confusing. Pace and the difficulty to follow were concerns with both synchronous and asynchronous discussions. Findings also revealed difficulties related to students' English language proficiency. A cultural tension resulted at one point from the

instructor's use of red colour in messages, which in Chinese culture signifies 'warning' and 'correction.' In relation to features such as forwarding and replies to multiple recipients, there were concerns on the part of students about the possibility of losing privacy. In contrast with these findings, the students thought of the online medium as "more comfortable… to express their thoughts due to no confrontation… concerns" (p. 57).

Studies Focused on Information Searching and Literacy

Hughes' (2009) study of international students learning online was different from other studies included in this literature review, in that it was conducted from the perspective of information literacy. In addition, her focus was not on online courses in particular, but on "the ways in which… international students use online information resources for study purposes" (p. 27). The purpose of her study was to identify the students' information literacy learning needs. It was conducted in the context of doctoral work. Participants were 25 international students at two Australian universities. Hughes relied on an approach derived from critical incident technique to investigate "real-life critical incidents experienced by the international students whilst using online resources for assignment purposes" (p. 5). The study addressed affective, reflective, cultural, and linguistic dimensions of students' use of online resources. Data collection relied on semi-structured interviews and an observation. One of the study's findings identified the "need for enhanced information literacy education that responds to international students' identified information literacy needs" (p. 5).

In the context of library research, Mehra and Bilal (2007) investigated the information needs and information seeking strategies of ten Asian graduate international students at a university in the United States. Data were collected through an open-ended interview questionnaire and a survey. The study focused specifically on "search engines, Internet, library website, OPAC [Online Public Access Catalog], online databases" in order to "make recommendations for improving information support services and participants' cross-cultural learning process" (p. 1). The researchers indicated that students did not seem to be aware of "the multiple language interfaces provided by Google and foreign language resources available on the web" (p. 10). One of the findings revealed that, when using digital interfaces, the international students experienced difficulties which were related to inadequate English language skills.

One aspect of Zhuo, Emanuel, and Jiao's (2007) study focused also on international students' use of library database interfaces. Data collection relied on a survey conducted with 100 international students in two universities in the United States. The researchers referred, as in Mehra and Bilal's (2007) study, to difficulties experienced by international students related to the English language when they used library-based technologies. With respect to facilitating international students' use of databases when conducting bibliographical searches, one recommendation for practice identified in the study included activating language interfaces in databases.

Jackson (2005) also focused on library-based technologies in a study that investigated international students' computer literacy skills, library needs, and exposure to libraries. Data collection relied on a survey conducted with 160 incoming international

undergraduate and graduate students at a university in the United States. Results indicated that the international students came to the university with high levels of computer literacy. Some of the implications related to offering orientation services for international students with respect to computer literacy.

A study conducted by Howze and Moore (2003) surveyed 153 international students at a university in the United States who were speakers of EAL. The specific focus of their research was a multilingual glossary developed by the Association of College and Research Libraries "for the purpose of assisting international students attending institutions of higher education in the US to understand certain terms related to the effective use of library-based technology" (p. 57). The study was designed to field test the glossary. Survey findings indicated a range of students' degrees of knowledge, "from not understanding enough English to know what a term meant, to knowing what a term meant to the degree of being able to explain it to others" (p. 57).

Studies Focused on Community of Practice

Other research on international students using computers and the Internet for learning has specifically investigated English language courses that used online bulletin boards. Studies of this type were conducted by Spiliotopoulos and Carey (2005) and Nguyen and Kellogg (2005). Both studies relied on notions related to communities of practice and used ethnographic techniques. Spiliotopoulos and Carey's study investigated 18 international students in a Canadian university who were taking courses in writing in English for academic purposes. The purpose was to explore how use of an

electronic bulletin board in a context of learning English writing provided students with opportunities for developing identities in ways that "[were] not as prevalent in the traditional face-to-face classroom" (p. 87). The study was informed by Norton's (2000) work on language learning and writing identity. Identity denotes "how a person understands his or her relationship to the world, how that relationship is constructed across time and space, and how the person understands possibilities for the future" (p. 5).

One assumption of Spiliotopoulos and Carey's (2005) study, drawn from Kanno and Norton (2003), was that the "learning and teaching of another language, perhaps more than anything else, reflects the desire and the possibility of expanding the range of current identities and reaching for wider worlds" (p. 242). Spilitopoulos and Carey relied on ethnography and grounded theory. Data collection involved electronic bulletin board postings, individual interviews, and the teacher-researcher's field notes and observations. The participation of students in the bulletin board helped in the formation of a group identity, "a community whose members supported and motivated each other and came to realize that they had a common goal in trying to master English" (p. 107).

Nguyen and Kellogg (2005) explored issues of identity in second-language learning. They used discourse analysis and ethnographic observations to analyze electronic bulletin board postings by 19 ESL students in a content-based course that relied on discussions. The participants were studying in a community college in Hawaii, in the United States. The authors drew on notions of community of practice, identity construction, and participation frameworks (e.g., Lave & Wenger, 1991) in order to explore how students constructed their identities through negotiated participation in the

computer-mediated environment. Technology created affordances for the students related to language learning, such as increased opportunities to use the language in the students' online course compared to their face-to-face instruction.

Commonalities

There were some commonalities in the findings of the studies included in this literature review. Some of the advantages of online learning identified by international students included flexibility of time and the possibility of revisiting course content. Disadvantages identified in the studies related to asynchronous communication, such as students' perceptions of delays in receiving responses and feedback. Other disadvantages related to language barriers for EAL speakers. Students also reported spending considerable lengths of time reading and writing online. They were concerned about whether their English language proficiency level prepared them to participate in online courses, particularly with respect to writing accurately in English. The literature review also highlighted that international students might need support in relation to use of library-based technologies.

One common finding in some of the studies was a perceived lack of cultural awareness, which was reflected in the ways in which courses were taught or designed, for example in terms of resources being perceived by students as monocultural. In addition, analysis of findings in relation to students' cultural influences, such as the value of harmony seeking in Chinese culture, provided insights into students' perceptions and behaviours in relation to online learning. In some of the studies, students reported

participating more than in face-to-face discussions whereas, in others, cultural factors that could hinder the participation of international students became prominent. In some of the studies, suggestions explicitly made by students to improve their online learning experience included adding synchronous communication to courses and combining online and face-to-face delivery.

The Contribution of this Study in Relation to Other Studies of International Students

Studies of international students using computers and the Internet for learning, particularly those conducted in relation to online courses, have tended to focus on cultural issues in particular, through the study of the influence of international students' cultural background on their perceptions and use of technology (e.g., Adeoye & Wentling, 2007; Al-Harthi, 2005; Shattuck, 2005; Walker-Fernandez, 1999). In those studies, students' engagement with technology has been analyzed primarily as related to their cultural background, including their previous educational experiences.

In contrast to these studies, the present study does not investigate international students exclusively through the lens of culture to enquire into international students using computers and the Internet for learning in online courses. Instead, its focus is broader. Although considering issues related to cultural difference in research on international students might provide some insights into their learning experiences, as Zhou et al. (2005) noted, it may be important to consider also the students' wider, institutional contexts of learning. In the context of a study of "the myth of 'passive' East-

Asian students" (p. 288), these authors warned against explaining students' behaviours in learning contexts based solely on reliance on cultural difference: "Placing emphasis on cultural differences or cultural attributes of Chinese students, without considering aspects of the educational context, may oversimplify and distort the mechanisms underlying [the students'] silence/reticence" (p. 289).

The research setting was postsecondary institutions in the United States in 17 out of the 23 studies included in the literature review (e.g., Al-Harthi, 2005; Hughes, 2009; Park, 2006; Shattuck, 2005; Thompson & Ku, 2005). The present study, however, was conducted in a Canadian university. Two other studies of online learning in the Canadian context by Zhao and McDougall (2008) and Zhang and Kenny (2010; see also Zhang, 2007) differ from this study in that they reported on graduate students.

The other Canadian study included in the literature review, conducted by Spilitopoulos and Carey (2005), was undertaken in a context of learning English writing. The present study, in contrast with research of EAL university students in general, which has tended to focus on English language courses (Westberry, 2009), does not investigate international students using computers and the Internet for learning in particular subject areas or courses, such as English language courses. It focuses instead on international students studying courses that were taken as part of their degree programs.

Some of the studies reviewed, particularly those that described their purpose as focusing on the perceptions or experiences of international students in online courses (e.g., Thompson & Ku, 2005; Wang, 2006; Zhang & Kenny, 2010; Zhao & McDougall, 2008), tended to present findings in the form of themes emerging from data analysis. In

the present study, however, findings related to international students in online courses were presented in the form of individual portraits of the students' activity systems. Some of the reviewed studies presented findings in relation to individual students, but were guided by frameworks other than the AT framework used in this study. There have been studies of computers and Internet guided by AT which have reported on individual instructors in a postsecondary context (e.g., Peruski, 2003) and individual teachers in a school context (e.g., Russell & Schneiderheinze, 2005). There have also been AT studies that were not focused on technology which presented findings in the form of individual student profiles (e.g., Tae-Young, 2007). Among the AT studies of international students using computers and the Internet for learning reviewed in this chapter (e.g., Brine & Franken, 2006; Nelson, 2002; Nelson & Kim, 2001), only Nelson presented findings in relation to individual students.

Summary of the Chapter

Some studies have investigated international students using computers and the Internet for learning (e.g., Brine & Franken, 2006; Hughes, 2009; Tu, 2001). Some of those studies have been conducted in relation to online courses (e.g., Al-Harthi, 2005; Shattuck, 2005; Tu, 2001). Others have focused specifically on English language courses using computers and the Internet to support learning (e.g., Nelson, 2002).

In terms of their conceptual and theoretical underpinnings, studies of international students using computers and the Internet for learning have used frameworks such as Communities of Practice (e.g., Nguyen & Kellogg, 2005; Spilitopoulos & Carey, 2005)

as well as concepts related to cultural difference and identity (e.g., Al-Harthi, 2005; Shattuck, 2005; Zhao & McDougall, 2008). For example, there have been studies using Hofstede's (1991) international difference dimensions, Hall's (1976) concept of low and high context cultures, and Holliday's (1994) host culture complex model. A study conducted by Tu (2001) relied on social presence, a construct derived from social psychology which has been applied to online learning. Research has also been conducted from the perspective of information literacy and library studies (e.g., Mehra & Bilal, 2007). The literature search undertaken for the present study identified only two studies (e.g., Brine & Franken, 2006; Nelson, 2002; see also Nelson & Kim, 2001) of international students using computers and the Internet for learning which have been guided by the framework of AT. These studies were reviewed in the previous chapter.

Some of the studies of international students using computers and the Internet for learning have tended to focus on culture (e.g., Al-Harthi, 2005; Shattuck, 2005). In contrast, the present study does not investigate international students exclusively through the lens of culture to enquire into international students in online courses.

The research setting was postsecondary institutions in the United States in 17 out of the 23 studies included in the literature review (e.g., Nelson, 2002; Park, 2006). The present study, however, was conducted in a Canadian university. Two other studies in the Canadian context by Zhao and McDougall (2008) and Zhang and Kenny (2010; see also Zhang, 2007) differ from this study in that they reported on graduate students. The other Canadian study included in the review, conducted by Spilitopoulos and Carey (2005), was undertaken in a context of learning English writing. The present study, in

contrast with other research of EAL university students which has tended to focus on English language courses (Westberry, 2009), does not study international students using computers and the Internet for learning in particular subject areas or courses, such as English language courses.

Some of the studies reviewed, particularly those that described their purpose as focusing on the perceptions or experiences of international students in online courses (e.g., Wang, 2006), tended to present findings in the form of themes. In the present study, however, findings related to international students in online courses were presented in the form of individual portraits of the students' activity systems. Some of the reviewed studies presented findings in relation to individual students, but were not guided by AT. Among the AT studies of international students using computers and the Internet for learning reviewed (e.g., Brine & Franken, 2006; Nelson, 2002; Nelson & Kim, 2001), only Nelson presented findings in relation to individual students. The purpose of the next chapter is to outline the study's methods.

Chapter Four

Methods

Introduction

The purpose of this chapter is to outline the study's methods. Information is provided on the context of the study, recruitment and selection of participants, data collection and analysis, individual student portraits, and member checking. In terms of data collection, the chapter presents the interview protocol used in the study as well as interview procedures. The description of data analysis in the study includes the protocol developed to guide coding of each interview transcript.

Context of the Study

The study's participants were international students at Memorial University of Newfoundland. This university is located in the province of Newfoundland and Labrador, Canada. Its locations on the island of Newfoundland include the university's campus, located in the city of St. John's, as well as the Marine Institute, which is located in the same city, and Grenfell campus, located in the city of Corner Brook. In the years before this study was conducted, the province had experienced an increase in enrolments of international students at different educational levels, reflected in the fact that, between 2001 and 2005, the international student population had more than doubled (International Student Enrollment Update, 2007).

With respect to international students enrolled at Memorial University of Newfoundland, at the time when data were collected for this study, there were approximately 1,000 international student enrolments. The most recent published data available about international student enrolments was from 2009 and indicated that, in the Fall semester of 2008, 948 international students were enrolled at the institution, including full-time and part-time international students. This represented 6% of the total university student population, which was comprised of 16,892 students. Of the 948 international students, 60% were from Asia, 13% from the Middle East, 10% from Sub-Saharan Africa, 8% from Europe, 6% from the United States, 5% from Latin America and the Caribbean, and less than 1% from Pacific Oceania (Memorial University of Newfoundland, 2009). In a strategic plan document, the university had stated a goal to "increase the proportion of international and out-of-province students from 16.5% to 35%, or a total of 7,000" (Memorial University of Newfoundland Strategic Plan, 2007, p. 24).

When this study was conducted, the university was also expanding opportunities for students to learn in online courses. Postsecondary distance education in the province of Newfoundland and Labrador had a history of over 40 years, since television broadcasting was implemented for three off-campus courses in 1969 ("Memorial celebrates," 2009). In the 1970s, educational delivery by means of teleconference was introduced through the Telemedicine Centre (Elford, 1998), which expanded in 1988 with the creation of the Telemedicine and Educational Technology Resources Agency (TETRA) to provide health and education services across the province through an

audiographic teleconferencing network (Robbins, 1999; Sheppard, 2001; "TETRA: Leaders," 1995).

Approximately 350 undergraduate and graduate courses were being offered through distance education at Memorial University of Newfoundland when the study was undertaken. The university had also been experiencing a significant increase in distance education enrolments (Griffin, 2008). In the year 2009, annual distance education registrations totalled over 17,000, from the province and worldwide (Director's Message, n. d.). It would not be possible to ascertain how these distance education registration figures compare with those from other Canadian universities or provinces. With very few exceptions, such as a 2011 Quebec report (Saucier, 2011), to date, data are generally not available in Canada on online learning enrolments and enrolments related to other distance learning modes, such as correspondence distance education (Bates, 2011).

The learning management system used for online courses at Memorial University of Newfoundland was Desire2Learn (D2L). Delivery was asynchronous (off-time), except for the fact that, within a course, instructors could include a chat tool which was available in the system. An online collaborative environment for synchronous (real-time) interaction using voice, Elluminate Live, was also available for online instructors if they wished to avail of that type of communication. It had been introduced in the academic year 2004-2005 (Murphy & Ciszewska-Carr, 2007).

Recruitment of Participants

Prior to recruiting students and obtaining their consent to participate in the study, ethics permission was received from the Interdisciplinary Committee on Ethics in Human Research (ICEHR) at Memorial University of Newfoundland (see Appendix A). Different strategies were used to recruit international students to participate in this phase of the study. A flyer (see Appendix B) was posted in various locations in the main university campus in the city of St. John's and also in the university's Marine Institute, which is located in the same city. The flyer was distributed to administrative staff in these locations and was also made available by email for distribution in a third location in the same province, the university's Grenfell Campus. Administrative staff was asked to post the flyer in a place where it would be visible to students. Visits of 10 to 15 minutes were arranged to classes for ESL courses, with permission from instructors, in order to present the study to potential participants. The students were provided with the researcher's contact information and the flyer.

In addition, an administrative staff person working in the university's International Student Advising Office at the St. John's campus sent a group message through the international student list serve to all international students (see Appendix C). A person working at the office providing services to international students in the Marine Institute also distributed the email in that campus. Other personnel contacted in different units distributed the message through internal communication, such as through departmental student list serves.

Some participation incentives were provided. These included a small gift package containing items such as a memory stick, which was provided after each interview. The names of participating students were also included in a draw for three iPods.

Students interested in participating who responded to the email were sent a reply to which a consent form was attached (see Appendices D and E). Students who consented to participate were asked to hand the signed form during the interview. Arrangements were made so that one person who was interviewed by phone could return the signed form by email. Students were also asked to indicate how many online courses they had completed, their area of study, and their mother tongue or tongues.

Selection of Participants

The criteria for selecting international students to participate in the study was that the students needed to have completed one or more online credit courses, taken as part of the requirements for completion of their university degree, and be speakers of EAL. The rationale for selecting EAL speakers was that, as part of the focus of the study on online learning and international students, insights could be gained on language-related issues for international students in that particular context of use of computers and the Internet. As opportunities for online study at the postsecondary level increase, more international students speaking EAL might participate in this form of learning. In addition, language has been identified as the most restricting condition for international students in online courses (e.g., Zhang & Kenny, 2010). This study provided an opportunity for a focus on a subset of students, international students participating in online courses, considering at

the same time English language-related issues which might manifest themselves for these students in that context.

A total of eight students studying at two different campuses of the university responded to the call for participation. Chapter Five includes portraits of the activity systems of five of these students. Four of the five portraits in Chapter Five correspond to undergraduate students and one to a graduate student. One portrait is of a female student and the other portraits are of male students, which relates to the fact that more male than female students answered the call for participation. The five portraits were selected among the total of eight student portraits because they comprised a range of student backgrounds, in relation to students' first languages, educational level, academic program, number of years of study at the university, perceived English language skills, and experience with online courses. Therefore, data from the other three students were not reported on when creating the individual student portraits for this dissertation because they presented more similar backgrounds (e.g., in terms of their experience with online courses, educational level, number of years of study at the university, and perceived English language skills).

The five students studied in two different campuses of the university, the St. John's university campus, and the Marine Institute, located in the same city. Their countries of origin were China, India, Bangladesh, and Jordan. In this study, representativeness was "secondary to the participants' ability to provide information about themselves and their setting" (Bloomberg & Volpe, 2008, p. 69). Sampling was consistent with Sarantakos's (2005) description of non-probability sampling, whereby

sample size is not determined statistically and small samples are used which can be selected before and during the research.

Other students responded to the call for participation but were not included in the study for various reasons. Some were not eligible to participate because they had taken correspondence distance courses which were not online, or they had completed online modules which were not part of a credit course, such as a module on ethics that the university requires for all students conducting research with human participants. Other students were not included because they initially expressed interest in participating but did not return messages providing consent to participate nor did they follow up, either by email, telephone, or in person, on the initial email exchange.

Data Collection

Development of the Interview Protocol

An interview protocol was created with open-ended questions (see Appendix F). The interview protocol was guided by the activity system components. Some of the questions were as follows: "What courses have you done online so far?" (subject); "Which tools do you use the most [in your online courses] and for what purposes?" (tools); "What did you hope to get out of online learning?" (object-outcome); "How is the online community of students different from or similar to the community in your on-campus courses?" (community); "What types of support are available and how do you access them?" (division of labour); "Are there guidelines or rules in your online courses about how to interact with other students?" (norms).

The interview protocols in Nelson's (2002) study of international students, which was guided by AT, also provided guidance as to the types of questions that could be used for the interviews. Also used for guidance were the interview questions from Peruski's (2003) AT study of university instructors teaching online courses and technical assistants. Some examples of interview questions from those studies that were used for guidance are as follows: "What do you use computers for in your everyday life?" (Peruski, 2003, p. 177); "If you could change anything about the class, what would you change, how, and why?" (Nelson, 2002, p. 206).

Interview Procedures

Individual appointments were scheduled by email with the students who provided consent to participate in the study. The interviews were conducted between April and June of 2009. The interview questions were emailed to each individual in advance (see Appendix F).

The participants were given a choice as to where they preferred to be interviewed, on campus or in another location. All of them chose to be interviewed on campus. One student who was not on campus because she was doing a semester-long internship in another location in the province was interviewed by telephone using Skype software. Except for this phone interview, interviews were face-to-face. They were conducted face-to-face rather than online because most students taking online courses at the university where the study took place would not have used synchronous, voice-based communication within their courses. At the time when this study was conducted, the

learning management system used at the university for online courses did not include a tool for this mode of communication. Instructors in online courses could avail of an online collaborative environment for real-time interaction using voice, Elluminate Live, but it was accessed separately and was not integrated into courses. The interviews were conducted face-to-face rather than online using asynchronous, text-based communication. Use of written communication for the interviews, compared to oral interviews, would have required an additional time commitment on the part of students. This additional time commitment might have prevented potential participants from taking part. Interviews lasted between one and a half hours and two hours. All interviews were recorded digitally. At the end of the interview, each student was invited to choose a pseudonym. One of the students preferred to be assigned a pseudonym.

Data Analysis

The interviews were transcribed in their entirety. The length of transcripts ranged between 27 and 56 double-spaced pages, for a total of 327 pages. When transcribing the text of the interviews, mistakes in the students' English were corrected. This practice avoided repeated use of "sic" in the transcripts. Care was taken not to change the intent of the interviewees' words.

Analysis of data began with multiple readings of each transcript. The text of each transcript was then broken into units of analysis. Assigning units to pieces of data involved marking off "units that cohere… because they deal with the same topic" (Miles & Huberman, 1994, p. 57). In the text of transcripts, the unit of meaning was used as the

unit of analysis, as opposed to, for example, the sentence. Unit of meaning refers to "a statement or a continuous set of statements, which convey one identifiable idea" (Aviv, 2000, p. 59).

The activity system components guided the organisation of data. For each of the interview transcripts, analysis proceeded by assigning each unit of meaning to one of the components. In cases when more than one component seemed to potentially relate to one unit of meaning, it was decided to which of the components the unit mainly related. For example, if one unit included a comment by a student indicating that a chat tool was available in his online courses, but it was not active, the unit of meaning was placed under norms, not under tools. The reason was that the restriction in use of chat discussed by the student was not related to the features of course tools themselves, but to how use of the chat tool was implemented in the course by the course instructor or instructional designers.

MAXqda2 qualitative data analysis software was used for analysis, to organise and manage the interview data and facilitate coding. One advantage of using this software was that it facilitated viewing coded data and retrieving sets of data, according to various parameters. For example, all units coded under one of the components could be viewed at once, either by transcript or across all transcripts, and easily retrieved for further analysis. The coding and different analyses conducted for the study also relied on Microsoft Word, which was used for initial coding of each individual student's transcript as well as when organising data to identify themes and conducting analysis in relation to the principles of AT.

Coding Protocol

A coding protocol based on AT was developed to guide coding of each transcript. The coding protocol included definitions from the AT literature for each activity system component. To further support analysis, the coding instrument included questions related to the activity system components. The coding protocol is included below in separate tables for each component. Each table includes two columns with the definitions and questions, as well as examples from the interviews with different participants.

Table 1

Coding Protocol: Subject

Definition	Guiding Questions	Examples
• "the 'who' of the activity system" (Wuori, 2009, p. 37) • "individual or sub-group whose agency is chosen as the point of view in the analysis" (Engeström, 1990, p.79). • "users' points of view" (Nardi, 1996, p. 95).	What personal backgrounds of the student(s) (e.g., educational, professional, linguistic, knowledge/skills in a particular area) are relevant to understanding the activity under study?	I think I am very involved with school work. I'm a very open person, very sociable,… I love meeting new people... My English is kind of ok to deal with the assignments that I write on a daily basis.

Table 2

Coding Protocol: Tools

Definition	Guiding Questions	Examples
• "the 'how' of the activity system" (Wuori, 2009, p. 37). • "tools available to help us get the job done (e.g. fulfill our motives)" (Wuori, 2009, p. 37). • "mediate between the individual (the subject of the activity) and the individual's purpose (the object of the activity)" (Bellamy, 1996, p. 124).	What (external and/or internal) tools are used to support activity?	Google is… on my laptop. It's on my phone…. I need it at every minute. That's always there, for everything: studying, looking up information…. Everything is Google. If I cannot understand a definition, I will search it in Chinese. It helps me to understand.

Table 3

Coding Protocol: Community

Definition	Guiding Questions	Examples
• "stakeholders in a particular activity or those who share the same overall objective of an activity" (Mwanza, 2002, p. 64) • "multiple individuals and/or sub-groups who share the same general object and who construct themselves as distinct from other communities" (Center for Research on Activity, Development and Learning, 2009, The Activity System section, para. 4).	Who is part of the community involved in the activity? How is the community defined by the student(s)? What is the student's (students') engagement in the community?	My education was outside of Canada. I'm just doing my Master's [in Education] now in Canada. So I'm practically not familiar with the schools here, the school system. I had to tell the guys that I am not a Canadian, I am an international student. One of them said, "Oh, I didn't know that."

Table 4

Coding Protocol: Division of Labour

Definition	Guiding Questions	Examples
• "the horizontal division of tasks between the members of the community and… the vertical division of power and status" (Engeström, 1990, p.79). • "the role each individual in the community plays in the activity, the power each wields, and the tasks each is held responsible for" (Bellamy, 1996, p. 125).	What are the roles and responsibilities of those involved in the activity? What types of support are available and what types of support are used?	Sometimes in the discussion forum we discuss what the teacher means and the teacher will clarify it. When I was talking to other classmates [in the discussions], it was probably like some kind of support… I could see their understanding... of a certain topic…. If, for some reason, I didn't understand whatever one of the students was saying, sometimes,… I would actually email that particular person.

Table 5

Coding Protocol: Norms

Definition	Guiding Questions	Examples
• "explicit and implicit regulations, norms and conventions" (Engeström, 1990, p.79). • "rules… constrain activity… [and] inherently guide (at least to some degree) …the activities acceptable by the community" (Jonassen, 2000, p. 103). • "broadly describe[…] the system's socially constructed/understood conventions" (Terantino, 2009, p. 38).	What are the (implicit, explicit) norms for engaging in the activity?	In face-to-face,… if I'm writing a section of my essay and I take it to my prof,… [there is] some kind of feedback we can get then and there. But, for the online course, we couldn't get that feedback right away. I tried to socialise with some people. I tried to get close to them. But, [I was] blocked.

Table 6

Coding Protocol: Object

Definition	Guiding Questions	Examples
• "the fundamental 'why' of the system" (Wuori, 2009, p. 38). • "precedes and motivates activity" (Nardi, 1996, p. 80). • "personal or collective motives" (Wuori, 2009, p. 37).	What are the student's (students') expectations and desires pertaining to, and reasons for engaging in the activity?	You can arrange a time to study…. I choose the online courses, if [on campus] it's an early class, because, if it is not online and it's early, I cannot get up. I didn't have to stay on campus just for only one course…. I really thought that being home and studying for it would really give me a chance to get a better grade.

Table 7

Coding Protocol: Outcome

Definition	Guiding Questions	Examples
• "the activity system produces *outcomes.* People are potentially different when they leave [a program of study]" (Russell & Yañez, 2003, p. 339).	How are students different after the activity?	But, in an online environment,… I've become like other students now, I'm more concerned about my marks and my assignments.

Individual Student Portraits

Once coded, the interview data were used to help create individual portraits of the activity systems of the five international students. The portraits are presented in Chapter

Five. The focus of the portraits was on providing a holistic description of each individual student's activity system in his or her online courses.

Member Checking

Member checking is used to enhance a study's trustworthiness (Lincoln & Guba, 1985; Patton, 1990). As Erlandson, Harris, Skipper, and Allen (1993) explained, member checks may be conducted in different ways, such as formally or informally, during interviews or after interviews. Once students' portraits were created, member checking was conducted by emailing each student their portrait for review, modification, and approval. This process provided each student with an opportunity to fill in any gaps in the portraits and "correct errors of fact or errors of interpretation… [and] offer additional information" (Lincoln & Guba, 1985, p. 239). Each student was invited to review and, if necessary, modify the portrait so that it reflected an accurate portrayal of their activity system. None of the students requested corrections, omissions, or additions to their portraits.

Summary of the Chapter

The chapter presented the study's methods. Data collection, analysis, as well as interpretation and presentation of findings were guided by the framework of AT.

Prior to recruiting students and obtaining their consent to participate in the study, ethics permission was received from the university's ethics committee. Eight students at two different campuses of the university responded to the call for participation. Data

collection relied on individual interviews with the international students who had responded to the call. In order to be eligible to participate in the study, the international students needed to have completed one or more courses delivered in online format at the university and needed also to be speakers of EAL. Chapter Five includes portraits of the activity systems of five of the students. The five students were selected because they comprised a range of student backgrounds, in relation to the students' first languages, educational level, academic program, number of years of study at the university, perceived English language skills, and experience with online courses.

The design of the open-ended questions used for the interview protocol was guided by the components of the activity system. Individual interviews were conducted with the students between April and June of 2009. They were recorded digitally and transcribed in their entirety. Analysis of data began with multiple readings of each transcript. The text of each transcript was then broken into units of analysis. Assigning units of meaning (Aviv, 2000) to pieces of data involved marking off "units that cohere… because they deal with the same topic" (Miles & Huberman, 1994, p. 57).

MAXqda2 qualitative data software analysis was used for analysis, to organise and manage the interview data and facilitate coding. The coding and different analyses conducted for the study also relied on Microsoft Word, which was used for initial coding of each individual student's transcript as well as when organising data to identify themes and conducting analysis in relation to the principles of AT. A coding protocol based on AT was developed to guide coding of each transcript. The coding protocol included definitions from the AT literature for each activity system component. To further support

analysis, the coding instrument included questions related to the activity system components.

Once coded, the interview data were used to create individual portraits of the activity systems of the five international students. The portraits are presented in Chapter Five. The focus of the portraits was on providing holistic description of each individual student's activity system in his or her online courses.

Member checking was used to enhance the study's trustworthiness (Lincoln & Guba, 1985; Patton, 1990). Once students' portraits were created, member checking was conducted by emailing each student their portrait for review, modification, and approval. Each student was invited to review and, if necessary, modify the portrait so that it reflected an accurate portrayal of their activity system. None of the students requested corrections, omissions, or additions to their portraits. The purpose of the next chapter is to present the first objective of the study, which was to identify and portray the activity systems of five postsecondary international students enrolled in online courses.

Chapter Five

Portraits of the Activity Systems of Postsecondary International Students in Online Courses

Introduction

The purpose of this chapter is to present the first objective of the study, which was to identify and portray the activity systems of five postsecondary international students enrolled in online courses. Each portrait is also summarised according to the components of the activity system. The portraits rely as much as possible on the interviewees' own words (see Maykut & Morehouse, 1994). Two of the students are from China, one from India, one from Bangladesh, and one from Jordan. At the time when the study was conducted, three students were enrolled in programs offered at Memorial University's St. John's campus. These were two undergraduate students enrolled in an undergraduate Engineering program and one graduate student enrolled in a Master of Education program. The two other students were studying in a Bachelor of Technology program offered at the university's Marine Institute, located in the same city. Unlike in the previous chapters, which included a summary at the end, in the present chapter there is a summary in graphic format for each student's activity system.

Portrait of Khalid's Activity System

Khalid described himself as a very friendly, sociable person:

> I'm a very open person, very sociable,… I love meeting new people all the time and I love to prove myself in everything I do…. In three years, they promoted me to… school supervisor, because I could hook up with all the students and all the teachers. They all liked me. I'm so friendly,…easy to communicate with, patient…. I talk to everyone. I'm so friendly with everybody. I like to have good times. So this is my nature. I can't hide it.

As an outgoing person, Khalid loved promoting his Jordanian culture. As he noted, "I would love to carry the flag of my country and wear a… traditional costume and make my food." He also thought that "cultural exchange… makes it easier to communicate with everybody."

Khalid's first language is Arabic but he referred to his English language proficiency level as excellent, which was reflected in his marks and instructor comments: "They told me, '… I'm treating you as a native speaker now.'" As a student, he described himself as very hardworking and as someone who loved studying and was dedicated to his studies and really concerned about them. He was concerned about marks as well because, for international students, "studying in Canada costs… a lot of money," but he also valued learning. He held a Bachelor of Arts degree from a university in his country. When this study was conducted, he was in the second semester of a Master of Education program and had completed two online courses as part of the program.

Khalid described loving the opportunity in online courses to work with others: "It was really interesting. I really loved that, anybody to ask me a question, because… I love to be part of a team." He loved peer studying in graduate learning, because, in contrast with what he described as "traditional" teaching in his country, this learning was more

collaborative and open, and instructors gave the students more chances to express their opinions. When he started online courses, Khalid thought that students could make friends and start their own social network. He also explained:

> It's just the interaction between people, like, they can spark some ideas in my head, they can answer some things indirectly, they can point my attention to things I wasn't really focused on. So, it's the whole thing, the interactive learning.

He would like to have a relationship with instructors whereby "they just say…, 'My office is open from this time to this time, you can just walk in.'" He also described his preferences regarding relationships between instructors and students in online courses: "I prefer… when the instructor is active with us [students],… like we feel he is with us all the time, when we discuss,… when we contribute to the questions... It's more comfortable to me, very, very comfortable." As an international student new to online learning, he also commented: "It's a first-time experience… That's why I want to know about all the aspects. So I would enjoy a form of… friendly discussion between me and my instructor to tell me about different things I might not be aware of." Khalid's idea of teaching was that "there must be some sort of interaction between the instructor and the students."

Khalid had taken all his courses on-campus in his first semester of studies but decided to take all his courses online in the winter, in his second semester at the university. He made this decision "because of the difficulty of transportation… in the winter," and "walking problems in the snow," because he didn't have a car. He would recommend online learning "very much" because of the "freedom and "flexibility of time," as he could "start something at night or in the morning or in the afternoon."

In Khalid's online courses, the learning environment was text-based and there was no voice: "We do reading. We do writing. We do no speaking or listening.... There isn't anything for voice chat or voice mail or anything like that... I haven't seen it." Yet, outside of learning, he referred to using tools for his communications with others such as chat, Facebook, Yahoo Messenger, and MSN, apart from using email.

Before he started online courses, Khalid had used the Internet every day. He referred to having relied on it for a long time. His laptop was also with him wherever he went. He contrasted his constant use of Internet Explorer and Google with his past practice of going to the library to search for information. In his online courses, the most common tool Khalid used was the forum, where students generated the discussion. This was the most active part of that learning experience for him. He described loving the chat room in those courses; however, he had to focus mainly on the discussion forum, for the purpose of "studying, and... getting a good mark, and to be committed to the deadlines."

Khalid commented that "it's not easy to be involved with the community" of the university. Students "don't have [an] international perspective." He believed that international students were "marginalised" and not involved very much in university life. When starting online learning, he found that, in his courses, "everybody was concerned about... his answers only and social interaction,... or communication between online students in online courses, no, there wasn't [any]." He described his face-to-face courses as being different in this respect:

> Everybody knew me, and I used to joke sometimes in the class, and everybody was laughing, and... we started, you know, having some fun. [During] the break,

> we… went to have coffee together…. There was nothing called international student or native student. It's like, everybody's the same. But in online courses, no… I tried to socialise with some people. I tried to get close to them. But, [I was] blocked.

He felt that students in his online courses were "confined to their own environment." He added: "Nobody in fact was curious enough to ask, for example, about my experience of other parts of the world…. All examples were used from the local schools. And when I added my own experiences, I did not get a response, as if it wasn't interesting to them." He was disappointed because his postings were not replied to as much as he would have liked:

> Some students, they raised big issues that really everybody must be involved in, you know. So I usually raised many of these big issues and that interaction was very, very limited…. I didn't receive any reply, but when somebody else added... an answer to the same subject, or almost similar to my answer, like, three or four would… reply.

Khalid introduced himself as an international student in his online courses, which he felt he had to do himself: "I had to tell the guys that I am not a Canadian, I am an international student. One of them said, 'Oh, I didn't know that.'" He wanted to let people know they would "have to be patient" regarding "anything… related to practical experience:"

> They knew… my education was outside of Canada. I'm just doing my Master's now in Canada. So I'm practically not familiar with the schools here, the school system, and what happens here, about the laws, about the social system in the province or in the mainland, so my sphere is still young. So… you'll have to guide me.

For support and guidance, Khalid relied usually on the instructor, whether in on-campus or online courses: "I might ask a peer or… a colleague in the course, but mainly I ask the instructors for guidance." Even in an online course, Khalid might ask questions

face-to-face to the instructor, rather than contacting other students: "I can't just go and ask anybody, because they would think that I don't know anything..., so I don't want to put myself in that image." The first day he started his online courses, he requested a face-to-face meeting for help, because he was worried, being an international student taking online courses for the first time:

> I didn't know anything about the online courses. And the only way of getting that help, I thought, was contacting the instructors themselves. So I requested a meeting with both of them, and I met with them, and they explained everything to me, how to use the course and [gave me] encouragement, in fact.

For Khalid, "the emotional part" was missing in online courses: "It's still very 'online.' You send emails and respond to emails, and that's it.... When you talk to me face-to-face, I can get hidden meanings, I can read between the lines, but... in email I will just be reading words." Khalid described trying unsuccessfully to "push the interaction" in his online courses:

> Once I noticed what is the culture in the... courses, what is happening here, I have to go by the rules. I can't play with my own rules... The students, it's just the way they do the online courses.... If you don't want to socialise with somebody, I can't force you to do that, right? It's up to you. It's your choice.

Khalid referred to other unsuccessful attempts to engage with students: "I did a test myself. I sent a couple of [messages]... about assignments..., and I passed a joke.... The answer came back, just the answer to my question, nothing else... on the chat room." He also found the discussion forum "very strict" because "people's attention is focused on the course and getting a mark and it's just for the subject, answering the question." Khalid explained that he would not be "intruding on their privacy" and was polite, but the formality of interactions "really could be depressing sometimes." He referred to the

formal comments of students in online courses as "very rigid," for example when using chat for group work:

> We have a chat room and we are supposed to be engaging with each other and exchanging answers and thoughts, so it doesn't harm if we can just make it less formal, for example, and we still can discuss the same subject we're doing. It wasn't as expected, in fact. It was just straight to the point. Answer the question. 'Ok, the chat room, we'll finish at 9:15.' At 9:15, everybody's out.

Khalid explained that the chat room was not very active, because it was only used if there was a scheduled meeting. There was a "Café" in the discussion forum, "like in a coffee shop, to just socialise," but it was only used when a student asked once about an assignment. In this regard, Khalid thought that it would "add to the teaching and learning process" if there was "any place… where people can talk or [use] voice…. Anything that would help break the ice, get the students to know each other more …. Something like MSN, where you can have… live chat, forums, exchange videos."

In terms of affordances of online learning, Khalid referred to being able to revise the English language in his postings, because of the text-based, asynchronous environment of his courses:

> You still have time to prepare your answers, to do your research, you can write them down… before you contribute to the course. This way, you're guaranteed no mistake, but in the face-to-face, many factors interfere, like, you're new to the country, and new to the session, and new to the environment, and you're not sure 100% of the reaction.

When responding to questions in on-campus courses, in contrast, "you might find yourself in a very embarrassing situation,… not know[ing] how to answer." In online courses, Khalid "liked best" the fact that, if he was unfamiliar with cultural references, he could still contribute to the topic being discussed after learning about the references by

"reading on the Internet" or "ask[ing] other people." In contrast, in face-to-face courses, being unfamiliar with references was "the worst part," because "you cannot play an active part… if it is something you have no knowledge about." He also indicated that, online, "you have your own time to prepare for the contributions." Although he valued the time as well as the place flexibility of online courses, he still thought that "you have to sacrifice many things for this purpose." For example, in on-campus courses, Khalid could ask questions "on the spot" and "get support at once," whereas, in online courses, when contacting an instructor, he noted: "You would have to send an email or request an appointment, or you can just send him the question, but in many cases they are late in responding to you… like, three, four days."

Khalid viewed the instructor in online courses as someone "sitting on the side, watching us only." His belief was that "an online instructor is dealing with cyber students; to him you're just a name on the screen" and "everybody is treated the same." He added: "Everything is online, you don't need to meet with the colleagues, with the students, you don't see the instructor. You don't know how they look, in fact."

He thought that there were differences between instructors in his online courses. In one course, the instructor was very active commenting on postings and even "gave… some examples from her previous career as a teacher." She "was with" the students and "you could feel her around with you." However, "there was no instructor" in the other course, other than when emailing information or feedback, because the course was designed in a way that students used to do everything as a group.

With respect to students, Khalid explained: "They don't know me…. Everybody

now is focused on his studies, and he has his own friends, already, and has his own life, already." Khalid emphasised that students and professors were "really supportive and polite" professionally; however, his courses were limited "in terms of… acceptance." He valued the fact that he could "meet new people,… learn new things,… exchange experiences, expertise," but this "wasn't happening" in his online courses. He explained that there was "nothing in terms of cultural exchange," and added:

> I have nothing to share, honestly, with my friends, with my family. If they ask, what activities did I do? "Well, I study and I'm home."… Cultural [exchange] must be promoted. It needs somebody to work, to make a plan for it so it can happen. I don't expect or think that students will just take it as it is.

Khalid described the opportunities to promote his culture as "very" limited both in his online and on-campus courses.

When he started online courses, Khalid thought that they "would be more interactive, more socially interactive with other students;" however, he found "really… negative… the lack of interaction between students… and the lack of interaction between the students and the instructors." Khalid noted: "If there was more interaction in online courses, I would take all my courses online, to be honest." He contrasted his experience in online courses with his face-to-face courses:

> You have more chance [face-to-face] to talk to people about their personal life, you talk about your personal life, you can joke with them, you can laugh with them…. On face-to-face courses, during the break, some people approached me because I looked different, you know? My dark skin and brown eyes, they would know that I'm an international student. So the first question, "Where are you from?," the most common question,… So it was a good thing to start talking to somebody, and then I would do my part and start asking them about their country, and their habits and traditions, and this way I made a lot of friends… But, online, it was nothing, absolutely nothing. Like, nobody's interested. To be honest, sometimes I thought, thank God they know my name.

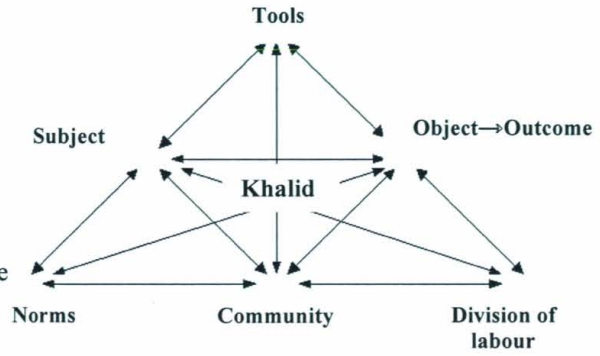
At the beginning of his online learning experience, Khalid was "really excited" because "something you do for the first time in your life, you're really excited about." However, his perceptions changed over time:

> … in an online environment, I noticed that all the students are focused on the subject, the course itself…. That's it…. I've become like other students now, I'm more concerned about my marks and my assignments. I was hoping for things at the beginning but, in the middle and at the end, no more, no more concerned.

SUBJECT
- Friendly, open, sociable
- Hardworking, dedicated student
- Internet user for a long time, for information searching
- Arabic speaker
- Excellent English proficiency
- Two online courses in Master of Education program

TOOLS
- Discussions for student-generated discussion
- Chat room for group work
- Chat preferred over discussions
- Email/face-to-face interaction for contacting professors
- Internet Explorer for information
- Google for information
- Laptop

OBJECT
- Time flexibility
- Place flexibility because of transportation/weather
- Good marks, while learning
- Interactive learning
- Peer-studying, teamwork
- Interactive, friendly discussion with professor
- Answers from professors 'at once'
- Making friends in online courses
- Getting to know students, 'break the ice'
- 'Pushing' the interaction
- Promoting his culture, cultural exchange
- Being more involved in university community
- Voice-based interaction



NORMS
- Asynchronous (mostly), text-based medium
- Opportunity to revise English language
- Opportunity to research unfamiliar cultural references
- No use of voice
- No means to see the professor
- No answers from professors 'on the spot'
- One professor 'on the side,' not very active
- Students in discussions focused strictly on the subject
- Formal, rigid email/chat student interactions
- Chat room for scheduled meetings only

COMMUNITY
- Online professors/students
- Unfamiliar with the local school system of the other students, who work as teachers
- Not involved in the university community

OUTCOME
- Time/place flexibility
- Good marks
- 'Most active learning' was in the discussions
- Waiting for professor's answers for days
- Not known to others; a 'name on a screen'
- Not known as international student
- 'Blocked' from social interaction
- Depressed with formality of interactions
- Followed 'rules' of formal, no social interaction
- Became 'like the others,' concerned about marks rather than interaction
- No opportunity for cultural exchange or promoting his culture
- Would learn online if it was more interactive

DIVISION OF LABOUR
- Asks mainly professor for guidance
- Asks online professors for initial face-to-face meeting
- Might ask questions to online students

Figure 2. Khalid's activity system as an international student in online courses

Portrait of Rajesh's Activity System

Rajesh is from India and was in the last year of a Bachelor of Engineering program when he participated in the study. He explained that he was shy at first with strangers. As a student, he described himself as striving for excellent grades: "I think I am very involved with school work, so I like to get good marks in school and I do like to get my 4.0s… at school and I do like to excel at what I'm doing."

Rajesh indicated that he had a "pretty strong Math background" and commented: "If it's anything to do with Math, I don't care how the information is given; I think I'll analyse it better than if it was something to do with reading a book." He also added: "I'm not good at reading stuff that's not Math-based." With respect to writing, Rajesh explained: "I'm not good at writing about stuff outside Engineering, outside the realm of Engineering."

Regarding his skills in reading, listening, and speaking in English, Rajesh described them as "pretty good:" "As far as day-to-day things go, I think I'm pretty proficient with [English].... It wasn't any different for me because I have been using English pretty much throughout my high school or through my school, basically." Hindi was Rajesh's first language and English had been used as the language for instruction and for his textbooks when he completed primary through high school education in his country.

When Rajesh was a third-year student at Memorial University of Newfoundland, he completed two online courses, one related to his Engineering specialization, and another one in the area of Social Sciences. He had previously taken correspondence,

non-web-based courses in Mathematics, Physics, and Chemistry in India while in high school to prepare for university entrance examinations. Rajesh was familiar with technology before he started completing online courses and noted that he had used the Internet since he was "five years old" and, in fact, "since it was made."

Rajesh already thought before starting online courses that they "wouldn't live up to the whole classroom environment way of learning." He explained: "[I prefer] on-campus courses because I have interaction with the students, I have interactions with the professors." He felt that he was also more used to the classroom environment and was a better student in that setting. Rajesh's decision to enrol in online courses related to course availability and his semester workload: "I had no other options, unless I wanted to do seven or eight courses in a normal semester, which I really didn't want to do." For this same reason, he had also considered taking online courses while back home in his first summer as a university student to "reduce [his] workload," but he eventually decided against that: "Even if they were offered, I had a feeling that I wouldn't be able to be evaluated properly or have proper communication." He also explained that there would have been delays related to the use of mail services in online courses to send materials to students: "I mean, mail dates, like a month and a half for you to get from here to home. Anything that they'll send me today will get there in a month and a half."

He noted that the best way for him to learn was "through regular evaluations," but he did not have those in his online courses: "In my past online experience, there was a definite lack of regular submissions and regular quizzes,… so there were times when I did slack off." He also commented: "It is better if someone is there explaining stuff to

you and then saying, do you understand it?" He thought that his Engineering course was better for him than his Social Sciences course because the course DVDs, where the professor did problems on a blackboard, helped him understand the material:

> The fact that I had DVDs did have a sense of being in a classroom, which was better than some web site telling me to read… from a book…. When he did the stuff on the board,… he'd go through the steps, so I knew how to do stuff more easily.

In contrast, Rajesh commented with respect to the Social Sciences course: "There wasn't a timeline as to how to do things. It was just, 'Do things,' which was harder for me with the course."

Rajesh was also concerned with understanding the expectations of professors in online courses: "It is good to gauge what the professor really wants or expects you to know by the end of this course,… which I don't think you can do on an email or a discussion board." In that respect, he believed that having real-time communication for interaction with the professors and students in online courses would have helped him:

> One thing I'd do, if not media conferencing, at least audio conferencing with the professor and a small section of the class… have, like, ten people plus the professor for half an hour interacting back and forth with either audio, video, or text,… at least have one real-time mode of communication... That, I think, is better, to understand what the professor needs from you in terms of the course, because every professor has different needs.

Rajesh used Google extensively for learning: "Google is… on my laptop. It's on my phone. It's always there. I need it at every minute. That's always there, for everything: studying, looking up information… Everything is Google." He explained that when he "g[o]t bored," he switched to Wikipedia in order "to see what is happening." He referred to having his laptop "all the time" with him: "I am always in

front of my laptop with everything on it. So I need to have my laptop around me to get anything done." In fact, his laptop had "replaced… phone as my communication tool." Because he studied Engineering, he also used a variety of programs and software, for programming, mathematical calculations, equation solving, and computer designs.

When commenting on his uses of the Internet before registering for online courses, he noted: "I found out about Memorial [University] through the Internet, so that pretty much says it all." Rajesh also commented that, since grade 10, when he started using the Internet, he had been "looking up a lot of information online that [he] wouldn't have before." The Internet was replacing textbooks for him and any kind of medium of learning.

In his online courses, Rajesh used mostly the course notes and discussion forum. The forum was his preferred course component because "you want to see what's happening," for example whether "the professor sent any important information… or anything about the final exam." He also referred to the forum as follows: "It's probably the only real thing that's available to me in an online environment, besides the note disposal [grade book] or the assignment disposal [dropbox] process."

Rajesh referred to using email to communicate with professors, whereas in face-to-face courses he would talk to them after class: "Because my interaction with the professor is only email-based in an online environment, I would communicate more frequently by email. In a classroom-based course, I just go to them after class and say, 'This is the problem.'"

Rajesh explained that he knew some international students in his Engineering

course when he saw their names in it, because he had previously met them in face-to-face courses:

> I knew them from before, not from the online course itself, because they were in the same class as I was when I was on campus.... But, in a course with 200, I'd know three, four people,...only because their name was on the class list.... You're in a classroom of 200 people and you don't know anyone of them or you don't see... them every three days.

He also noted that his online courses were different from his on-campus courses in Engineering, where students were "close" to each other. He associated this closeness with the fact that they studied in a cohort system:

> We started with a group of people, we started all Engineering, and it's the same 10-15 people in every single class, and I think we've gotten really close like that. I mean, you'd see them from 9 o'clock in the day to, I don't know, midnight at night, every night,... and then you start hanging around with them and go watch movies and things like that, whereas I don't think I've done that, well, I cannot do that with the online people.

Rajesh explained that he interacted more in online courses than in on-campus ones: "I'd post more stuff on the discussion board than I would in a classroom environment." He thought that people "do tend to take active participation" in discussion forums. He added:

> I think people do open up more when they are in an online environment. I know I did.... I was posting a lot more stuff in the discussion forum than I would raise my hand and speak up in the classroom even if I knew the answer.... If I was in the classroom environment and if I knew the answer to what the professor or some other guy was asking me, if the person hadn't picked me up from a crowd of people, chances are I wouldn't be answering them. I opened up in that regard, in an online environment.

He noted that he frequently looked for online resources and, then, would go to his professor, "just to say, 'I don't understand this, can I get help with this?'" However, Rajesh contrasted this type of support from professors with support in online courses:

"When you are in a purely online course, you don't have that fall back." Instead of contacting the professor, he relied on online course mates for answers to questions. He felt that through the discussion forum he could "express [him]self," asking questions about assignments to classmates:

> Let's say I have an assignment to do and there's a question I don't understand. I'll just post …, and see if someone is going to hint it to me…. Or, before finals or midterms, in the [Social Sciences course], we are allowed to see what people have to say about the midterm…, say how I feel about it… So I can express myself in a class, see what kind of a reaction they have to the course and see how I stand according to that reaction.

One reason why Rajesh contacted classmates rather than professors was that, in some cases, he sent emails to his instructor but didn't get a response, whereas he received faster responses from other students. He explained:

> There are cases when I won't send out emails to my professor who's online. I'd rather put the question on the discussion board and wait for anyone to reply than send an email to a professor. With the fact that I do have a discussion forum available online, I think emails to a professor privately are obsolete…. There's always someone at the other end who is willing to help you out. So I've always had answers, but not necessarily from the professors…. Instead of the professor being my fall back, I fall back to the discussion forum. If I can't figure it out, I'll just post a question in the forum and expect or hope someone answers me, whereas, with the on-campus [courses], I'll ask a professor and I know he'll know the answer, because he is the professor.

Regarding services available to support learning, Rajesh was not sure if the services of the university's writing center were available for students in online courses. He explained: "I'd appreciate it if they had some kind of an online system tool… where you need to write things where you could preliminarily pass in papers to say, 'Is this good enough for a professor?'"

Rajesh referred to the "freedom" of online courses with respect to time and place:

> I'm doing six courses every semester when I'm on campus, and I don't have the time to do another course, so the courses I do online are whenever I want to. When I'm not doing any courses I'm basically done at 5:00. Then I come back and I'll do, like, a course which I need to do for my Engineering elective, to graduate.

Rajesh noted that there were disadvantages for him in online courses related to working on his own: "Where… you can do what you want when you want…, I found I wasn't doing what I was supposed to do with the course." He explained that the flexibility of online courses required student self-pacing and compared them to on-campus courses in this respect:

> I have classes 9:00 to 5:00 every day and then I'll stay back till 12:00, 1:00 every day doing assignments and doing questions and doing things,… whereas if I am doing online courses, I don't even do anything till two days before the midterm or two days before the final…. I found in online courses you are the one more responsible about doing things… than you are in a classroom environment.

In his online courses, Rajesh could avail of the discussion forum and course notes, and there were also lectures in DVD format for one course, but he would have liked to have more resources: "With my courses, I found there wasn't enough material…. I had to go back to Google and find stuff…. It was closed off, in that sense that they didn't give you anything else except those for normal things, they wouldn't say, 'You can go read this if you want more knowledge.'"

In terms of teaching in online courses, he commented: "I don't know what kind of a teaching style there was, because the only teaching that the professor really did was, 'Read these sections this week and read these sections this week.'" He also thought that there were fewer opportunities for feedback and explanation of material from professors in online courses: "With an on-campus course,… you could say, 'This is where it came

from,' but, if you don't understand it, they'll do it again for you in another fashion, or things like that, which isn't there in the online environment."

He described his online courses as being "all asynchronous," but he would have liked to have real-time online office hours for support: "At least have like professors have, office hours for you in a classroom course, where they dedicate two hours a week where you can go and talk to them… that kind of a concept should be available online, too." He would like the possibility of instructors "sitting online," being available on demand so that students could communicate with them in real time.

He indicated that he would not have participated in the discussions in his online courses if the discussions were not a requirement. In that sense, he referred to participation being forced: "The only reason why I took part in those discussions was because I was made to, because they were worth 10% of my final grade." He thought that, in the forums in his courses, because of the large numbers of students, there was not an opportunity for discussing ideas with others: "I don't think it was a discussion, it was more of me just throwing an idea and someone else throwing an idea and then stopping there."

Rajesh commented that most students "were just names" to him because he "didn't see any of them" and his online courses were large. He didn't think that the online environment was a medium to make new friends, "because you don't know anything about [the students]." He added: "I think [that], on a personal level, you can't make friends or make relationships. With an online group of people in an online environment, I couldn't because, well, I didn't know who they were."

Rajesh indicated that references in the discussions and course notes were related to Canada only: "There weren't any current topics… except Canada and I found that I was expected to know them sometimes…. That's definitely one thing that should be kept in mind if you're doing an online course." In addition, with respect also to discussions, Rajesh noted difficulties related to the fact that students used informal language:

> …you might have problems with language, you might have problems with even slang in most cases, because I found the discussion forums to be really informal, and someone from Newfoundland might use slang that anyone else must know, but someone coming from somewhere else might not know what that means.

Rajesh's performance in terms of grades when taking online courses was not as good as he hoped: "I never had more than a sixty something on an online course [whereas] I've had 100% in my classroom courses." With respect to his Social Sciences course, he commented: "I thought it was going to be the whole bunch of reading and then getting low marks and it ended up being a change of perspectives on things, but I still got low marks." He referred to learning in online courses as "slower:" "It takes me way longer to learn stuff from an online course."

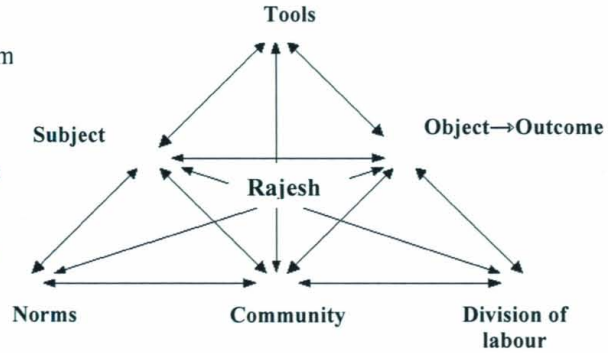
He considered his Engineering course better for him than the Social Science course because it was "more Math-oriented." If choosing between taking a course online or on campus, for "Science- or Math-based courses," he would take on-campus courses, but for a "reading-based" course, learning online "would be ok." He concluded with respect to online courses: "If you're willing to do everything you're assigned to do in a timely fashion, I think I'd recommend that." He had decided that he would try to fit on-campus courses into his schedule "instead of going online" and would not take an online course in the future if he "didn't have to."

SUBJECT
- Shy at first with strangers
- Very involved with his studies
- Strong background in Mathematics
- Not good at writing/reading outside of Engineering/Mathematics
- Very familiar with technology
- Hindi speaker
- Very proficient in English
- Two online courses, one Engineering and one Social Sciences course, taken as part of an Engineering program

TOOLS
- Google, Wikipedia for course material
- Laptop
- Course notes
- Discussions, for information from students and professors
- Discussions as preferred course component
- Email for interaction with professors
- DVD with lectures in one course
- Dropbox in the courses
- Grade book in the courses
- Programs/software related to Engineering studies

OBJECT
- Time flexibility
- Interactions with professors and students
- Excellent marks
- Regular evaluations, submissions, quizzes
- Comprehension checks, explanation of steps
- Knowing professors' expectations
- Real-time interaction with professors, students / online office hours with professors

NORMS
- Asynchronous, (mostly) text-based medium
- No online office hours in real time
- No real-time interaction, e.g., audio conferencing
- Fewer explanations/ less information from professor than on-campus
- Can't use professor as 'fall back'
- Emails to professors not always answered
- Required to do discussion postings
- Students 'throwing ideas' in discussions
- Not enough material in courses
- No regular evaluations, submissions, quizzes
- Student self-pacing needed
- Need to be responsible
- Large online classes
- Not a medium to make friends
- Domestic students' use of slang
- No current topics except Canada
- Expected to know Canadian topics



COMMUNITY
- Online professors/students
- Acquainted with international students from on-campus courses
- Close to other Engineering students, not to online students

OUTCOME
- Time flexibility
- Opened up, expressed himself in discussions
- Sense of 'being in the classroom' with DVDs
- Not more than 60% in marks
- Better student in on-campus courses
- Not doing what he was supposed to do; 'slacked off'
- Learning was harder, with fewer timelines
- Learning took longer
- Needed to look up Canadian references
- Less clear expectations than with real-time interaction
- Other students 'just names' to him
- Would choose on-campus over online courses

DIVISION OF LABOUR
- On-campus, asks professors; online, asks students
- Receives answers from students, not always from professors
- Searches online first; asks professor as second resort
- Unsure if there is writing support for online students

Figure 3. Rajesh's activity system as an international student in online courses

Portrait of Dina's Activity System

Dina is from Bangladesh and was in the third year of an Engineering program at Memorial University of Newfoundland when the study was conducted. She was not on campus that semester, as she was completing a work term in a small town in the province where the university is located. She described herself as "very talkative." She thought that she was "just like an average student."

Her school education was in English, although teachers sometimes used Bengali. She thought that her English reading and listening were "pretty good." However, she had difficulties sometimes speaking English in terms of "finding words." With respect to writing, she commented: "My English is kind of ok to deal with the assignments that I write on a daily basis." She had some grammatical errors but, as she worked on second or third drafts, they would "go away." She added: "There might be some hidden mistakes that I might not be able to pinpoint, but other people, like my prof or someone in the writing center, might be able to assist me."

Before starting learning online, Dina's experience with technology for learning had consisted of using Google, for example to "Google about the topics that [students] were studying in school." As part of her degree, she had taken an online course in the Social Sciences while she was in her home country for four months. She explained: "I didn't have to stay on campus just for only one course.... I really thought that being home and studying for it would really give me a chance to get a better grade." The course was in full semester format, which she thought helped her learn better than the other option available, which was an intensive, six-week course.

In the future, Dina intended to take more online courses for reasons related to her course load: "I am actually thinking about taking a course online for next semester.... Probably I might not have enough time,... going to class and doing the course, since I will have five other courses." She could "save time" while doing the other five courses on campus. She also referred to other reasons why she preferred to take the online course:

> For that particular course, the one that I am trying to do online, what I heard from people is that the online course is more organized.... If I can do it online, then I would have interaction with my instructor but, at the same time, learn about the topic and probably do kind of good.

Dina explained that she "like[d] to interact" with her professors to learn more about course material. In addition, she referred to the organization of the Social Sciences course she had taken online as "the best aspect" of online learning: "All the materials were really organised....We were given an outline beforehand. This is the time when this would be done,... and it had to be submitted by then... It was really time-specific... That was my preference."

Dina referred to Google as the main tool to support her learning: "For any general course,... the first thing on the Internet I would go to would be Google... and search for books, articles, documents. Basically, that's how I would start to learn or get a general idea of [the topics]." She also used the university library web site: "It is easier first to get a lot of information in e-journals [and] sometimes e-books are a good reference." She would use those resources to help her write research papers or she would borrow print books from the library to "read... and try to understand the topic." For a particular topic for a research paper in her online course, she could not find enough material and went to

a local library in Bangladesh to get some resources related to that topic which were in her language. She translated the material to use in her paper and to share ideas with others in the course.

Dina liked the discussion forum because students shared ideas and she could "see what was in other people's minds." She was using the forum to communicate with other students. Some students, however, preferred to "give out their MSN or Yahoo email addresses to contact them."

She commented on using email with other students to ask questions related to information they posted in the course. She also described frequently using email to contact the professor "whenever [she] had a question."

Dina referred to not having previously met any of the online students in her course: "In on-campus courses,… I might have interacted more than in the distance course, probably because I have seen those people before,… in some other courses. But, for the online courses, we really don't know anyone." As a consequence, it "took a while" before students started interacting with others.

To help her learn, Dina did "a lot of reading," and, then, if she did not understand the material, she approached the professor:

> I like to interact with my prof.... I would read the material myself and, after that,… I would go approach my professor… When he or she explains it,… I can remember that stuff well. And I would be able to relate it later, when there would be an exam or quiz. I can actually recall that stuff more.

Dina would email her right away and she was the first person to whom Dina would ask a question: "To understand the topic well, whenever there was any kind of difficulty, I would actually email her... I'd say, 'I don't understand this topic.' 'What are

you suggesting me to read?'... 'How can I improve my mark?'" Dina also compared the online and face-to-face environment regarding the type of opportunities students had to interact with the instructor:

> For an on-campus course,... if there was a question-answer session and people were asking questions, sometimes other students may have the same question as me and... the instructor already answered that... So I would be losing a chance of interacting with the instructor there...; online, I wouldn't know... what are the questions that other people had.... I would actually take the initiative to talk... with my professor,... but, if I am in a classroom environment, I think [it's in] a more quiet [way]. So, after the class is over, or when I get a chance with the prof alone, I usually approach the prof.

Dina described her professor as someone who "liked to interact with [students] on a daily basis." She added:

> We were encouraged to participate in the forum. But, our prof,... she liked to read whatever we were writing in the forum. And..., if she saw that someone's idea wasn't correct..., she would actually sometimes reply back. She would herself write in the forum... Whatever we were discussing, it was like in front of her.... If someone else sent her a question and if she thought that the answer would be important for the rest of us, she would post that answer... So that was a really good thing.

Besides contacting the instructor, interacting with other students was another way in which Dina received support in her online course:

> I could share my thoughts with other students... Say, if I was incorrect, then someone else would clarify my problem... They could... give each other ideas about what kind of essay we might want to write.... When I was talking to other classmates [in the forum], it was probably like some kind of support... I could see their understanding... of a certain topic... I could see what their level was and what my level was.

In addition to using the discussion forum, she also relied on sending private emails to students:

> If, for some reason, I didn't understand whatever one of the students was saying, sometimes even after... the assignment was due,... I would actually email that

> particular person and say, 'What did you mean by that? I'm trying to know for the midterm or for the final.'

In terms of support from different university services, Dina referred to once using the writing center. Her online instructor had suggested that students "give that a try." Dina commented: "They pointed out a few… mistakes… I think that is what they do, probably read it out and just point out grammatical mistakes." She thought that professors or teaching assistants could also provide support by reading rough drafts of assignments and giving feedback: "For a research paper, we were not [assisted] by any TA [teaching assistant] or professor, but we just got some help from the writing center, and that was all." In terms of other services, Dina referred to delays with mail services:

> It usually took like a month for anything to reach my country from here…. And, for the midterm exam that I took, the questions probably reached really at the last minute, so I was really worried, what if the questions didn't come over, how am I gonna get the exam. So I think that, if they use express mail or something, it would usually reach there.

Dina considered online courses were "a really good option" because, "no matter where you are in the world, you can always participate in online learning." She also indicated the advantage of having the whole course content available: "It would be easy for me to go back and see the questions or the lectures. And I could… read it over and over… The notes would be all online for me to read." She referred to her online course as being structured:

> It was organised and it was easy to use... We could easily contact our professor, send her emails, regarding any questions. She would get back to us maybe within a day or so. And it was basically easy to find information on the assignments that were due, or talking to other people.

In addition, because feedback was written, it was more organised than if the instructor was saying it verbally. With respect to students, she found "that people probably share a lot more ideas there than in face-to-face courses" because "a lot of people prefer using the Internet." In addition, she thought that students' "thoughts would be more organised when they are writing."

However, Dina referred to disadvantages related to working in a text-based environment: "It takes less time to communicate verbally than try to write it down.... When you are trying to write something..., it is not always easy to do that.... Verbally, you can actually speak faster and explain that more easily." She added:

> When you are writing something, you probably would use a bit more vocabulary and wording.... I would say it's hard to understand things in the written material, especially for us whose, you know, English is their second language. It is easier to understand when other people are talking rather than... reading the materials.... Some people don't have that kind of a writing skill,...when they try to write. It can become bookish, like using the same language as in a book... When you are talking, you use less complicated vocabulary.

With respect also to working using text, Dina thought that adding video lectures would be helpful:

> It was basically mostly written text... I found that, for some topics, if we were probably shown a video, it would be much easier to understand, rather than reading... It would probably give us a lot more information, because, sometimes, getting the information visually has more impact on you than reading it.

In relation to online learning compared to face-to-face learning, she also commented: "On-campus..., we are seeing our professor and sometimes facial expressions do matter, how they are explaining things." She added:

> There was no face-to-face interaction with the instructor... The only thing missing would be the expression of the instructor or the students. You don't know how they are doing.... While doing the online course, I don't have the

> advantage in choosing my… facial expression or talking verbally to an instructor. So that is different.

Dina also commented with respect to her frequent contact with her instructor by email: "I think I used the email a lot… whenever I had a question,… just to give her an idea of what kind of student I am,… because there is no personal, no face-to-face interaction."

With respect to interaction, Dina also explained: "It would be hard for me sometimes to interact…, because English is, of course, my second language and sometimes it's not really easy for me to write down my ideas." In terms of support related to writing, Dina thought that there was more support for international students in the face-to-face environment:

> Sometimes there might be some grammatical mistakes that we might have even though we are trying out best… When we're doing a classroom course, we can probably get hold of our prof and get feedback…, but while doing an online course, we really cannot get any feedback before submitting our essay, although there is… the writing center in the library that we can send our essay to for proofreading…. In face-to-face,… if I'm writing a section of my essay and I take it to my prof,… [there is] some kind of feedback we can get then and there. But, for the online course, we couldn't get that feedback right away.

Dina compared on-campus and online courses with respect to immediate answers from instructors: "For the online courses, the only disadvantage would be not seeing the professor… and not being able to ask the questions then and there." In face-to-face courses, she could approach the instructor right after a lecture. In her online course, she would have to email the instructor and "probably wait a day or two…, so it was not an instant reply." When working on an assignment and trying to meet the deadline, she would not know if she would get an answer back before the deadline.

She contrasted the fact that she was a talkative person with her behaviour in the online course: "I wasn't really that talkative in the course… When I had ideas about the course itself, that's when I really talked. I really didn't talk much about my life outside the online course." Dina explained: "[I do] not [have social interactions] as much as I would have… in a face-to-face course…; mostly, it was relevant to the course."

Dina also compared making friends in face-to-face courses versus online: "When you are seeing someone in person, you're probably able to become friends on campus more easily than you are online, because you kind of know that person or kind of can share more ideas." She added:

> I probably found it a little hard to talk about myself in that online course rather than face-to-face, probably seeing one person personally or seeing their face. Because, when I see someone, how they are talking verbally, it's possibly easy for me to make friends with them and interact with them. They know about my personality more than in the online course.

Dina would recommend taking a course online. She had been "really intrigued" by the idea of doing a course online when she started her course. When she finished it, she considered it met her expectations, in terms of being able to be in her home country for a summer while studying and also in terms of getting a good grade: "What I expected was fulfilled." What had concerned her most before she started learning online was her contact with the instructor and instructor feedback specifically: "I wasn't really sure… how I am going to contact my professor, how long he or she is going to [take to] give me feedback." However, at the end of the course, she "had a good impression about it." After two or three weeks, Dina was already getting feedback from the instructor, which

helped her realise that "the course would be good." She described how her "worry went away:"

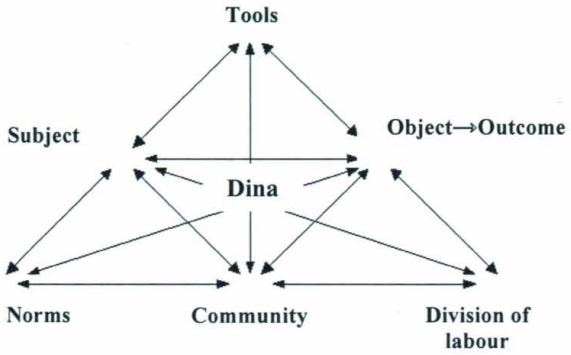
> The professor was really responding to my questions and other people's questions…, she checked our essays and gave us marks and also gave us feedback, what we could improve and what we could explain more, so slowly I became happy with my performance and also the … feedback… provided by the instructor.

In terms of her preferences regarding course format, Dina commented: "I think on-campus courses would be best, but doing [a course] online is a good option as well, if you don't have any lab or anything, if it's only theory-based." Her first option for a course would be to do it on-campus and, if that was not possible, she believed that on-campus courses could be complemented with online components. She described this course delivery format as follows: "The best thing is… to do the courses on-campus and, for the on-campus courses, if they can also maintain a website where there would be postings, a presentation or lecture on a daily basis…, it would be more helpful." Dina connected that preference with her recent experience in an on-campus Engineering Mathematics course, where she found that having solutions to problems available online helped her complement her on-campus classes: "Our professor used to post the solution to problems online, so we could actually go back and do the problem sets ourselves, and then, to correct it, we could just go check the solution." This was advantageous because "when the prof is not there, or right before exams, [students] can actually go back to a particular problem set and check out the solution." She thought that students "do prefer some kind of written version of solutions or lectures" because they can go back to them and revise what they learned in the classroom.

SUBJECT
- Very talkative
- Is 'like an average student'
- Previous use of Google for school
- Bengali speaker
- Good at reading, listening in English
- Difficulties sometimes speaking English
- Some grammar errors writing in English
- Worried about doing a course online
- One online Social Sciences course taken as part of an Engineering program

NORMS
- Asynchronous, text-based medium
- Interactive professor in her course
- Students sharing more ideas online
- Organised course
- Opportunity to reread, for understanding
- Opportunity for organising thoughts when writing
- Opportunity for organised written (versus oral) professor feedback
- No replies/feedback 'right away" from the professor
- Spoken language less complicated than written language
- Spoken language easier to understand than text
- All text, no video for explaining content
- No facial expressions to help understand
- Limited professor support with English writing
- Easier making friends seeing faces, on-campus
- Takes longer to start interacting

TOOLS
- Google as main tool for learning
- E-journals, e-books in library web site for papers
- Books in physical library for papers
- Discussions to share ideas
- Discussions as tool used most in course
- Email to ask questions to professor
- Email to ask students about course topics
- MSN, external email addresses given out by some students



COMMUNITY
- Online professors/students, writing service staff
- Not acquainted with online students

OBJECT
- Time flexibility
- Place flexibility while in Bangladesh
- Interaction with professor
- Feedback from the professor 'right away'
- Good marks, while learning
- Video, rather than all-text environment
- Organised course

OUTCOME
- Time/place flexibility
- Expectations fulfilled (good marks, study in Bangladesh)
- Happy with her performance
- Happy with professor feedback, interaction
- Worry about learning online 'went away'
- Support received through student sharing in discussions
- Not as 'talkative' as in on-campus courses
- Worried about mail delays
- Preference for on-campus courses with course web sites

DIVISION OF LABOUR
- Learns by reading first, then emails professor to ask questions
- Emails students to ask questions
- Receives student support via discussions / email
- Used writing support service via the library
- Delays with mail services

Figure 4. Dina's activity system as an international student in online courses

Portrait of John's Activity System

John described himself as a shy person and expressed a preference for online communication in general and also for online learning: "I'm good at communication through the Internet. If online, I can be more confident to talk…. It's personality, I think. I just prefer distant communication, maybe…. I like my computer very much, so I like online courses."

Although he described himself as shy, John explained that he communicated more with others in his online courses than face-to-face: "I actually, if on campus, don't talk to others, I already don't communicate with others, just myself, I come and go, just like that… I do communicate more if online." He also described himself as more outgoing in those courses: "Actually, I think I have two sides…. I am not afraid to ask questions…. Maybe I'm not so shy, maybe more funny, in the courses. … [My language] would sound more funny."

John had used Internet since his school years for entertainment, to play video games. In terms of non-recreational uses of technology, he used the Internet frequently for work-related purposes when he was in China, to contact customers, for a business that he owned, as well as in relation to "workshops,… website development [and] tech support." He was also skilled with technology because he had previously completed a diploma degree on technology in his home country, China.

He considered himself to have a better reading proficiency level in English than other language skills: "I think people from China, they'll be good at reading, but not speaking, listening, or writing…. For me, reading is better and, actually, I think, for most

Chinese." When describing himself as a student, John referred to the importance of attitude:

> I try my best to focus on the studies.... Maybe I'm just a student like others, go to the library, spend as much time as I can on studying, and follow the instructor, the lecturer.... It's about attitude, you pay attention, attitude when studying, and just studying to learn better.

John was enrolled in a Bachelor of Technology program at Memorial University of Newfoundland when this study was conducted. Prior to pursuing a university degree, he studied at a college located in the same city as his university and took three online courses that he transferred to the university. Before studying in Canada, he completed a diploma program in Engineering, with a focus on technology, offered in a Chinese university. In his current program, he had completed five online courses.

Regarding why he decided to take online courses, John explained that what he considered most important was that their schedule is flexible: "You can arrange a time to study.... I choose the online courses, if [on campus] it's an early class, because, if it is not online and it's early, I cannot get up...." Other courses he needed were only available online, and so he had to take them in that format. When asked about his reasons for taking online courses, John also referred to his communication preferences: "For the communication, it's better for me.... I like to communicate [online], even not face-to-face."

John referred to reading text in his online courses as being easier for him than listening to instructors in face-to-face courses. He commented:

> A lecture is harder. Yes, for online courses, reading English for me is easy. Reading is much better than listening to the instructor, in the lectures.... Because I can look through the material faster if I'm reading but, if listening, I have to

> concentrate more on the instructor's pronunciation… and if I have to take notes, I will miss something from the instructor.

John described using MSN in one online course to communicate with other students: "In MSN, we say, oh, the instructor said this, this is what he or she meant in the discussion forum." To support his learning, he also relied on Wikipedia and Google: "I usually have [Internet] open, by my side. If I find something I cannot understand, I have to look for it,… I go to Google, and, typing the questions, probably I will get an answer." He also used online monolingual dictionaries in English, rather than bilingual ones in English and Chinese: "English to English…. I think it has more information…. I think if we study English we should just use English, I mean, the same dictionary English to English, all English."

In his online courses, John used most and preferred the content section, where the course notes and other elements such as the course schedule were available, as well as the discussion forum. He went to the course content to "check the due date of every assignment and quizzes and exams" and to use information available on the textbook, like slides and exercises with solutions. He also referred to "figuring out" in his courses how to use a feature available to monitor his progress: "You just click in 'See your progress,' when you log into the online courses. It tells you which sections you have clicked on and how long you have spent on each section."

With respect to real-time interaction, MSN was used in one of John's online courses to communicate with a supervisor, who was not the course instructor. He also explained that, when he completed college-level studies in Canada, there was a feature in his online courses that allowed for chat with the instructor.

In terms of the types of interactions in his online courses, John referred to interactions being mostly related to the course, except for the introductory messages that the instructor and students posted in the discussion forum at the beginning of the course: "You have to write an introduction of yourself, you have to write what you are doing, which job, like that." John described some of the comments in the discussion forum as follows: "I think a lot of times we talk about the weather in the discussion forum…. 'Oh, yes, there's snow.' 'Oh, that's beautiful.'… I don't think anybody talks about their lives, except the weather."

John referred to using real-time communication, as well as email, with other Chinese students in his online courses, through private communication:

> I know two Chinese students right now… I see their name … so I just chat with him or her and find out the information…. I email first and then we use MSN, outside of the online course, to communicate…. Actually, I asked a question in the discussion forum and nobody answered me. Four days later, a Chinese student said, "Oh, yes, I know that."... [She] replied by email.

In his online courses, John relied on asking questions to instructors: "In the most recent course, I just used email and asked questions…. Any silly question, I can ask." With respect to whether he communicated more with instructors in online or face-to-face courses, he explained: "I communicate more… online. Face-to-face, for tough questions only." For technical questions, he relied on the university's technical support service, which he contacted by chat.

John commented that he preferred online communication with instructors as opposed to face-to-face, but he thought that, sometimes, not enough support was provided: "I prefer the online [to have questions answered], not the lecture… through

email communication… But some instructors are missing: 'I don't want to answer these questions.'" On-campus, in contrast, John thought that students "don't need support" because "you just go to the lectures and you listen and nothing else." He commented with respect to instructors in online courses:

> He or she should answer all of the questions and… should answer the students if there are very tough questions. They should pay more attention to that…. Who answers the questions? Perhaps actually they could have the exercises and the solutions in the content section and you can find them just there…. You don't waste a lot of energy to find the textbook [sections] and to find the answers.

With respect to the instructors in two online courses he was taking in one semester, John commented: "One is not teaching at all and one is teaching." He thought that the instructor in one course did not provide enough information, because students might be referred back to the course or the textbook when they were trying to find specific information:

> It's very hard to find the information and the instructor is not so nice…. I mean, if anybody asks one question, the instructor just says, "In the instructions you can find it," but it's actually hard to find it…. Actually, I don't know in what chapter to find information of the textbook, on the web site…The instructor will say, "Go to the textbook and you'll find the information"…. Yes, when the instructor doesn't say anything to the class and just says, "Look at the content section and you will find the answer," I don't like that.

John also commented on the role of instructors with respect to their participation in discussion forums as well as how they assessed students' participation. He thought that instructors could check students' contributions more and participate more in the forums:

> They just say they are going to look at [participation]. They don't say how…. I think I prefer to have the participation evaluation but…. the instructor would check, and he or she should spend time on it... Some instructors, they don't check it at all. He or she has no participation at all.

A chat feature was available in John's online courses, but it was not functional: "For my courses, the instructors could chat with us but they don't, and the chat section is not available, actually.... You click in there and there's nothing there." John explained that the benefit of using chat would be not so much in terms of communicating with other students. Instead, he would be able to "get information instantly from the instructor." He once made an appointment to use chat to talk with an instructor. He would have liked to have chat available to contact the instructor in the sense of "any time, you can find the instructor," not just when meetings had been previously scheduled.

John would have liked voice to be added to the text-based environment to support learning: "I think that people should add some voice... to the online courses.... Just add sound, voice system.... It's just better communication." He also believed that "everybody would prefer voice..., like a lecture in the [class]room." He would also have liked the option of real-time communication to have more immediate responses from instructors:

> We cannot see each other, so, actually, we slightly know each other, and the instructor maybe gives us feedback two or three days later, and maybe it's too late.... Actually, it happened to me. I emailed the instructor and haven't got feedback for four days.... I mean, if there was instant messaging, I think it would be much better than email. I don't have to wait.

John also thought that adding visual components such as videotaped lectures might help support his learning: "Actually, maybe in other institutions they have videotapes.... Maybe that would be helpful. [There's] no video at all." As well, he commented on the possibility of adding a chat or discussion student space in online courses for socialising only:

> It should be added..., the instant communication.... There could be a separate discussion just for people to discuss, for social interaction, not for course purposes. ... Within the course, a different section.... To know each other better, maybe be happier to study with others.

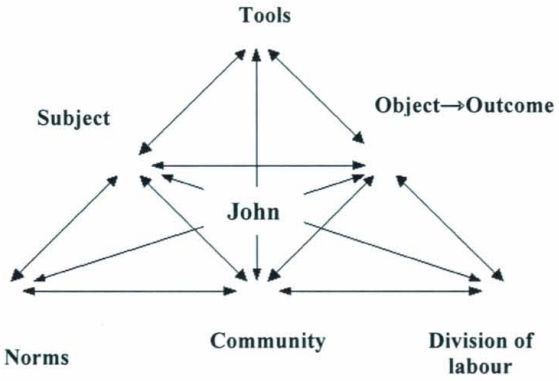
For John, flexibility of time was "the most important thing" about online courses: "You don't have to rush to go to the classroom. And, later, you can get into the web site, find the information about what you have to learn, and communicate with the instructor at any time." He also referred to place flexibility, in the sense that "it's better for some people who go back to their country... and, when in another place, they can have flexible time." However, the flexibility of online courses requires students to exercise self-control: "It's about self control, control the time to study, force yourself to study." He referred specifically to the need to avoid distractions: "I mean, it's better for somebody just to play video games with their own computer."

Before he enrolled in online courses at his university, John anticipated that "for online courses, there would be video talking, with the instructor, like, chat," but real-time communication was not available in his online courses. The only exception was the course where he was using MSN to contact his supervisor. John's expectation was related to the fact that, in his previous online learning experience at the college level, chat had been available to interact with instructors. He believed that the lack of tools like chat made the experience more "boring" than he thought it would be. Compared to using email, he "like[d] the instant chat...with the distance courses." John, however, explained that he still preferred online to on-campus learning.

SUBJECT
- Shy, doesn't talk to others on-campus
- Not shy online, but confident
- More communicative, funny online
- Likes computers and online courses
- Good attitude, focused on studies
- Skilled with computers
- Website developer
- Video gamer
- Chinese speaker
- Good at reading English
- Previous experience with online courses
- Five online courses in Bachelor of Technology program

NORMS
- Asynchronous, text-based medium
- Faster understanding reading online than listening in lectures
- No videotaped lectures
- No use of voice
- Some professors are 'missing'
- Hard to find course information
- Little information / guidance in one professor's responses
- No 'instant,' real-time chat to contact professor
- Course chat not active
- No 'instant' interaction to get to know other students
- Online versus face-to-face learning suitable for him because of shyness
- Nobody talks about their lives
- Need for self-control

TOOLS
- Google and Wikipedia to find answers to questions
- Monolingual English dictionaries
- Content section for course notes, due dates
- Content section as preferred tool in courses
- Discussions to ask questions
- MSN with other students
- Text-based interaction with online Chinese students
- MSN for contacting one supervisor
- Progress feature in online courses



COMMUNITY
- Professors/students, technical support staff
- Other online Chinese students, mostly

OBJECT
- Time flexibility
- Online interaction with professors, as opposed to face-to-face
- Interaction with professors available to answer questions
- 'Instant' answers from professors
- Use of voice/real-time, 'instant' chat with professors
- Videotaped lectures
- Explicit evaluation of participation for discussions

OUTCOME
- Time flexibility
- Prefers online to on-campus courses
- Did not know where to find information
- Wasted energy finding information
- Waited for days for professors' answers
- 'Boring' experience
- On his own for learning

DIVISION OF LABOUR
- Interacts online with professors for questions
- Finds answers to his own questions if not getting answers from professors
- Uses MSN with students to discuss what professors meant
- Asks questions in discussions, gets response from a Chinese student
- Technical support service through chat

Figure 5. John's activity system as an international student in online courses

Portrait of Albert's Activity System

Albert completed his primary and secondary school education in his home country, China, and held an undergraduate degree in Engineering from a Chinese university. He described himself as an easy-going and adaptable person. As a student, he needed to be "pushed." He explained: "I'm sometimes kind of lazy…. If I [am] stuck somewhere, stuck on something, and,… you know, [because of] my personality, if I cannot finish it, I will just not go through it." Group work had not been part of Albert's previous educational experiences: "Most homework in my country is individual, not with a team." However, he referred to group work as supporting his learning as a university student:

> I have lots of ideas. I like group work…. It's, like, brainstorming, sometimes you discover something [about] yourself, when you talk with others, something… you didn't know. For example, if I'm in a room, thinking by myself, I cannot figure it out. If I talk with team members, it just comes…. If I have team work, I will check the email all the time, and participate more, and talk with people more.

When the study took place, Albert was in the fourth and last year of a Bachelor of Technology program and had participated in six online courses that were part of that program. With respect to how he felt when he started learning online, he explained: "At first, I don't know how I could have a class online, what should I say…. I'm kind of shy, maybe." Before starting the courses, Albert had spent a lot of time online for recreation purposes, for example "[using] YouTube for entertainment, looking for information, reading a book, and playing online games." However, technology was not integrated into his courses when he completed his undergraduate degree in China.

In terms of his English language proficiency, Albert commented that his vocabulary was "not good." In relation to the different English language skills, he explained:

> I think reading is better, and the next would be listening, and then speaking. I think writing is the worst [skill].... Because, for example for reading and listening, I can understand what [people] mean, and, if I don't understand, I can check the dictionary, maybe ask. For speaking, I can choose the word I know. But, for writing,... I just translate directly from Chinese.

He also thought that he was "limited" by his English language abilities. He illustrated this limitation by referring to his difficulties writing discussion postings in online courses: "Sometimes I cannot just say what I think properly."

Albert initially registered for an online course because of a schedule problem that meant he had to drop one course he had chosen to take on-campus and take it instead online. When the study was conducted, he was taking three online courses and none on campus, because he had gone to China that semester for one and a half months.

Albert expressed a preference for on-campus over online courses. One reason for this preference was that he could practice his English listening skills in on-campus courses. When comparing the two types of courses, he also argued that "people want to make friends with face-to-face communication." Albert thought that, both in his online and on-campus courses, students were "the same," in the sense that "people always prefer to connect with people face-to-face." He then associated this preference with the possibility of meeting Canadian students to learn more about their culture:

> We can know more... about the Western culture. If I just take on-campus courses, [I have] more Canadian friends. That's the reason.... We can have more interaction with other classmates, for sure. That's the real meaning for us [international students] to study overseas.

Albert described the tools he used for learning:

> Search engines, like Google, and [the university] library.... Microsoft Project.... I have dictionary software. If I move my mouse on the words, I see the English explanation and Chinese explanation.... Online, sometimes I have an academic dictionary, maybe for Economics, for technology. You know, for some words in certain areas the meanings are different.

He thought that sometimes he relied on Google "too much:" "Everything I don't know, I use Wikipedia, Google, or ask someone with email. Sometimes I think I can search for everything online." To help support his learning in online courses when learning new concepts, Albert noted: "If I cannot understand a definition, I will search it in Chinese. It helps me to understand... [, for example,] a technical word, very hard to understand."

Albert also relied on compiling web sites that he used for learning in relation to technology-related areas. He referred to using the "favourites" feature in Internet Explorer for organizing information. He thought that this feature would be useful in his online courses:

> You know that, for Internet Explorer,... we can click all the web sites that we like together as favourites, so I think [online courses] could be set up with this kind of tool. For example, I read a topic, [and if] I think it will be useful next time, I can put it in my favourites.

In his online courses, Albert explained that he mostly used "the discussion forum, the next one is email." With email he could "get a response quickly." He also communicated "mostly using email" with team members.

He referred to the grade book as a "special aspect" of the courses which helped him monitor his progress: "It's very clear and, everything you've done, it's marked already. I've done several quizzes, maybe overall 70, you've got 25 points out of 100.

You know that. But, for the on-campus courses,…we don't know." For online courses, he also found it useful to create a calendar to help organise deadlines: "I write it [all the information about deadlines] down, in a calendar, just for online courses. I try to memorise it, but it is hard…; for example, there are almost ten or 20 deadlines."

Albert referred to the fact that most of his friends were not in Canada. He explained that he did not meet other international students from China in his online courses and that most of the students were domestic students. He emphasized his need for the support of other people in relation to his courses, for example when completing research projects: "The instructor, the teacher helps me learn…. I need help from the teacher, from classmates, from friends…. I focus, maybe get help, ask for help from others…, my team members, the teacher, friends." He referred to how he used the discussion forum:

> If I have something I do not understand, for example, there are several requirements for this paper,… maybe, the way the teacher wrote them, it is hard to understand, I will ask…. Most times the instructor replies first, because he is the, how do you say, expert. He knows everything about this course…. Sometimes in the discussion forum, we discuss what the teacher means, and the teacher will clarify it.

Albert did not rely on the technical support service but knew that it was available by clicking on a button. In terms of language supports for online courses, he had used the writing service available from the university library several times to "check grammar mistakes." He also commented: "Some instructors will give us… a certain pdf file to help us, like, what kind of sentence not to write, how to use punctuation the right way." One instructor, for example, sent him information about the use of prepositions.

Albert thought that online courses were convenient for students who had a heavy course load or wanted to study on the weekend. He commented: "When the students register for an online course, that means they're busy, they have work…. They are not full-time students, so the time is very hard to manage." He referred to online learning as being flexible: "Online, we know what we should do on the first week…. I can arrange the time by myself." However, he noted that students might experience difficulties related to that flexibility: "We will forget something, because it's not a regular timetable."

He had experienced difficulties when he started online courses in relation to finding information, especially in the discussion forums, which were "too wide-ranging" and "cover[ed] everything:"

> It was very hard for me… I'm not familiar with the structure and the information is everywhere. I cannot find the information I want… The first months or couple of weeks, … it's very tough for me. I cannot find the requirements, the homework or the information from a certain chapter. Or the deadline!.... I missed a couple of quizzes…. Feedback for the midterm, or deadlines, or requirements for different papers,… explanations from the teacher. It's just mixed with the discussion from the classmates.

Albert believed that the discussion forums could be more user-friendly. He referred to the fact that, in comparison, there were "more functions" in Chinese forums that he used:

> I go to lots of forums, like, for everything related to news from Shanghai, [to] get some information, and maybe for technical discussions…. I can check everything I write. If I write something, I can click it and it will show everything I have written on and everything in response to my topic. Maybe if I asked the same question, maybe other classmates, maybe the teacher, or team members answer me, you know, the web site could put it all together and show it to me. There is no need for me to search for it individually, one by one.

It was not clear for Albert what the expectations were in terms of participation in the course discussion forums and how that participation was evaluated: "The instructor will say [that] you should be involved in some discussions.... But how you were involved and how much you were participating, they didn't mention it." He was not sure if instructors used the progress feature available in courses to evaluate participation: "They have this function.... Maybe some instructors will check this. Maybe the longer time you spend, the higher mark you will get. Maybe. I don't know."

When starting learning online, Albert found differences among his courses in terms of their structure. In some courses, not all the material was released at once and he needed to "check... for the new upgrade all the time." In others, the whole content was available and he could "read every material at the start of the semester." He also referred to instructors providing information in different ways: "For example, some teacher put an announcement here, maybe, for chapter one, someone puts it in the content, [while] someone will email it to you. For this semester, I chose three online courses, and everything is a mess." Albert, however, referred to having found over time a way of organising information:

> But after two months,... everything is clear. I have a book,...I write every deadline and the requirements, individually, on paper, [because] I cannot always check it online.... I even have a calendar, you know, with quiz one, two..., paper one, paper two, or some proposal, or PowerPoint.

In terms of instructors in online courses, he identified "different styles." He described some as being "casual" and "not very serious, and not too tough:" "For example, they give you lots of materials or give you everything that you read and then answer the questions." He also described a different style: "Some teachers seem very, it

doesn't mean not good, they're just very focused, step by step, 'This week you should do that.'… And everything's under control." He had no preference, however, and commented: "I just follow the instructor's style."

Albert compared online and on-campus courses: "For the on-campus, the instructor cannot write everything. Sometimes I am confused and do not understand, because of, maybe a language problem, maybe a knowledge problem." An advantage for him of working in an online medium was the possibility of revisiting text, which facilitated comprehension: "I can read…, repeat and repeat, until I understand, yes, even for the instructions from the instructor,… so I ask a team member, I can check [words] in the dictionary… and lots of times I understand what he means." However, Albert referred to having to "think a lot" when writing, before he posted comments or sent emails:

> Online, I email back and forth, reply, maybe I need one or two days. I will think a lot before I say something, not like in the oral discussion; I can say anything I'm just thinking, without any hesitation…. Online, if I type something, it will be here, all the time, so we should be very serious when we type.

In addition, understanding may be hindered online because of lack of visual cues: "The words on the web are… not as fresh as the people say to me face-to-face. Even word by word the same sentence would be more difficult to understand because there are no facial expressions." Albert thought that voice recordings could be used in discussion forums in the courses, in the same way as in the Chinese forums that he used:

> Using the discussion forum as a web site, we could put the voice on it. When I click on something, the teacher's voice comes up…. I've just used it before,… not for online courses, for… other discussion forums… Chinese forums…. With a microphone, I do not need to type some words. I can record my voice. Everything is on this web site. I click it and my voice comes up.

Albert compared face-to-face and online courses with regard to the need to wait for responses or clarification when learning online. He added: "Sometimes I just feel helpless, so I cannot get help… especially when I'm stuck in some step. I cannot get help immediately and this time of waiting is very tough and I feel so bad." He commented on the "delay in this kind of way of communication" and lack of real-time interaction:

> When I want to ask some question, sometimes the problem is figured out already. I cannot ask someone immediately… For example, it's 10 pm. I'm working on a paper. I have a question. In an online course, if I could make a call or [have] online chatting with someone, but…, if I send an email, no one will respond until the next day, the afternoon, so I will not do it [email the instructor]. So, that's it.

He referred to using email to communicate synchronously with other students during group work: "Sometimes we just email each other. Even the response will be… ten seconds, or half a minute, but we still use email most of the time." He would have liked instead to have real-time communication: "Actually, I like the real-time chatting or the email…. I use email a lot, but it is harder to use than real-time chatting."

He also commented on difficulties understanding explanations because of the use of idioms: "Native people can understand, but not me. They use very tricky, weird explaining… For example, 'You cannot solve it with a silver bullet.' I don't know what's 'silver bullet.'…. They talk everything like this."

Albert thought that more language supports could be provided in online courses for international students. He referred in particular to support in real time: "If I have any question about language, I can ask online; [like] they have technical support now, if you have any technical problem you can talk with a technologist." He also commented that some instructors focused more on English grammar than others: "Some [online]

instructors focus on the knowledge you learn, others just focus on the grammar. Maybe you write a paper, and it's very good, but you have lots of punctuation problems. You just get a low mark." He explained:

> If you do on-campus courses, for international students,… the instructor will understand we're not good at English…, so we get higher or extra marks for that, for understanding. But, for online courses... the instructor maybe thinks, "It's online, [so] for everybody it's the same. If you don't understand, you can check the dictionary. You can check the web site. You can read slowly, maybe a couple of times"… They think all students are equal. For on-campus courses, some instructors ask me: "Do you have any problems with my pronunciation? Can you understand? Did I speak quickly?"

In addition, Albert explained: "Lots of the students are native speakers [and] the questions they ask are very professional." He also experienced difficulties because of cultural differences:

> Maybe for the Canadian people who were born here, it's easy to [get] involve[d in] a new environment, but maybe for Chinese… it takes a longer time to start work if we do not know each other…. I think online courses maybe are more, how do you say, maybe proper, suitable for the Canadians, because they like to say their opinion, state a point. In our culture,… we are not very open to show our ideas and, if you ask if I could do this,… it's hard for me to say no; but, if you act like this online, there will be a big problem.

He described an advantage of the discussion forum in online courses: "In some on-campus courses, for international students, it's very hard to [be] involve[d] in the… group [of] native [speakers],… but in… discussion forums, there's no difference between us." However, he indicated that there was "less interaction" and less discussion on "social topics" in the online courses. He added:

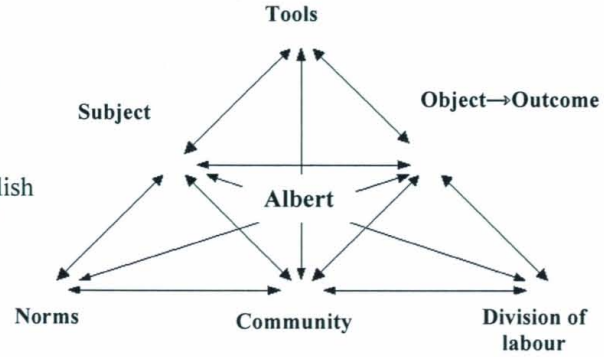
> There's no need for me to show, kind of, what I am. We just focus on studying, that's it. I think no one wants to know who you are and what you are like…. We introduce ourselves the very first day of this course, but that's it. No one would pay attention to you…. We just focus on studying, learning…. Maybe we talk about the questions or the chapter. That's it.

Albert also explained that it was "very hard to be friends,… just by email," compared to face-to-face courses, where students might meet every week: "We can have a party together, even, but, online we just do the essay. [There's] no other communication or contact beside this." He would also prefer to have "more direct interaction" and to "talk more, besides the studying, the learning, the course." He commented: "I prefer more communication, but I just don't know how it would work online." In terms of his preference for online or on-campus courses, Albert had concluded that "combin[ing] online and on-campus together… would be much better."

SUBJECT
- Easy-going, adaptable
- Shy
- Lazy student sometimes
- Likes group work
- Web user for recreational purposes
- Chinese speaker
- English vocabulary not good
- Writing as worst skill in English
- Limited by his English abilities
- Six online courses in Bachelor of Technology program

NORMS
- Asynchronous, text-based medium
- Opportunity to reread, for understanding
- Need to think a lot when writing
- No voice recordings
- No real-time, 'immediate' interaction
- No use of voice/listening to practice English
- No facial expressions to help understand
- Unclear participation expectations and grading in discussions
- Discussions too wide-ranging
- Many deadlines
- Unstructured information
- Different online course structures, teaching styles
- Not as easy to express opinions as for domestic students
- No interest from students in knowing others
- Hard to make friends through email
- Students' questions have a professional focus
- Idioms used in discussions
- Professors focus on English grammar

TOOLS
- Discussions used most in courses, then email
- Google, Wikipedia for learning
- Chinese language to understand concepts
- 'Favourites' feature to organise information
- Dictionary software
- Online technical dictionaries
- Library web site for assignments
- Microsoft Project for group work
- Email with group members, professors
- Discussions to interact with students
- Grade book to monitor progress
- His own calendar to organise deadlines



COMMUNITY
- Online professors/students, writing service staff
- No other Chinese students in online courses
- Most friends not in Canada

OBJECT
- Time flexibility
- Place flexibility while in China
- Learning that includes group work
- Understanding what professors mean/expect
- Interaction with professors available to answer questions
- Real-time, 'immediate' interaction
- Would like more features, e.g. voice recordings, like in Chinese discussions
- Learning about Western culture
- Making Canadian friends

OUTCOME
- Time/place flexibility
- 'No difference" when in discussions for international vs. domestic students
- Felt 'helpless' and 'bad,' due to 'delay'
- Forgot information; missed quizzes
- Couldn't find information/requirements
- Became more organised regarding deadlines
- Couldn't properly express thoughts in discussions
- Learnt less about Western culture
- Focused on studying, not on the social
- Fewer Canadian friends than on-campus
- Prefers combination of on-campus/online learning

DIVISION OF LABOUR
- For help, asks professors, students, group members, friends
- Asks questions to students, professor in discussions
- Students clarify in discussions what professors meant
- Uses library's writing support
- Receives language support from some professors

Figure 6. Albert's activity system as an international student in online courses

Chapter Six

Thematic Analysis

Introduction

The purpose of this chapter is to address the second objective of the study, which was to cross-analyse the portraits of the activity systems of the international students to identify themes. As Yamagata-Lynch (2010) explained, studies guided by AT may rely on qualitative analysis "as a lens to identify… prevalent themes" (p. 7). The themes were labelled as follows: *Asynchronous, Text-Based Interaction*; *Synchronous Interaction*; *Time and Place Flexibility*; *Social and Cultural Interaction; Teaching Presence;* and *Independent Learning*.

Themes

The theme of *Asynchronous, Text-Based Interaction* referred to both the affordances and constraints associated with the norm of asynchronous, text-based interaction in the students' online courses. The theme of *Synchronous Interaction* related to students' object of interaction that replicated real-time learning in face-to-face settings, such as through use of synchronous voice and asynchronous video in online courses. *Time and Place Flexibility* captured the object of flexibility in learning which constituted students' motivation for enrolling in online courses. The theme labelled *Social and Cultural Interaction* captured students' object of having social interaction in their courses as well as cross-cultural exchange. The label of *Teaching Presence* was used to capture

students' object related to: the articulation and clarification of expectations; course organisation; design of discussions; provision of support in relation to writing; availability of professors to answer questions and provide feedback; and selection of content. The theme of *Independent Learning* related to the division of labour in the students' courses, with an emphasis on peer-to-peer learning and on direct access to online resources and tools for independent learning.

Asynchronous, Text-Based Interaction

In terms of norms in the international students' online courses, the course medium was exclusively or almost exclusively asynchronous (without real-time interaction) and text-based. The students' online courses could have been designed differently, for example by including tools other than those supporting asynchronous interaction; however, their courses relied on asynchronous, text-based interaction as a norm. This norm offered affordances but also presented constraints. Brine and Franken (2006) referred to the possibility of focusing on affordances and constraints (see Gibson, 1979) when investigating computer and Internet use from an AT perspective. They indicated that this focus allows us "to view [learning] activity, and the technology that mediates activity, in terms of the potential and the limitations that are presented to learners" (Data Collection and Analysis section, para. 5).

In terms of the affordances of asynchronous, text-based interaction in the students' online courses, Dina and Albert commented that they could go back to read course content and discussions. John explained that he understood course content more

easily by reading text in his online courses than by listening to professors face-to-face. Khalid referred to having time to do research and prepare written contributions in his own time and in advance, in contrast with answering on the spot in on-campus courses. Khalid and Dina noted that they could focus on their English language writing before they contributed discussion messages to their courses.

Asynchronous, text-based interaction also presented affordances for the international students, as EAL speakers, in terms of the opportunity to organise their thoughts in advance when writing messages. They could also focus on the accuracy of their English writing, for example, by using online bilingual or monolingual dictionaries. Asynchronous, text-based interaction offered them the opportunity to revisit and review course content and discussions at their leisure. They could look up unfamiliar cultural references in advance. In relation to other affordances, students referred to discussions in particular, in terms of sharing with other students and greater participation than in oral discussions in on-campus courses.

For John and Dina, asynchronous, text-based interaction suited their learning style because, for example, they described themselves as more proficient in reading than in other English language skills. Online courses suited Dina's learning preferences because she thought that it was helpful to receive explanations from the professor in writing. She considered that explanations in writing were more organised than oral explanations. In contrast, explanations provided orally by professors in on-campus courses might not be as organised. The text-based context of online learning was beneficial for Albert, who liked to read online resources in his first language to understand concepts used in his

courses. It might also have benefitted him in terms of understanding the content of students' comments in discussions, which could be difficult to comprehend when they had a professional focus.

In their asynchronous courses, students like Dina and Khalid had opportunities to address language-related issues before they contributed discussion messages. Asynchronous, text-based interaction also offered affordances to the international students in online discussions in particular. Rajesh felt a sense of comfort knowing that there were always students willing to help others in the discussions. He "opened up" to others when participating in online discussions. He found that he contributed more to discussions in online courses than he did when he was in on-campus classes. Dina also explained that students shared more online than in on-campus discussions. Albert noted that, in discussions, there could be more participation of international students, when compared with domestic students, whereas international students may participate less in discussions in on-campus courses.

With respect to students' knowledge of cultural references, asynchronous, text-based interaction also supported the international students' learning in ways that might have been more difficult in on-campus classes. Khalid was not familiar with references to the Canadian educational system that were used in his Education courses. As a result, in oral discussions in on-campus courses, his participation was restricted. However, when learning asynchronously, his lack of familiarity with cultural references did not hinder participation, as he had time to research the references before contributing to course discussions. John, Albert, and Rajesh described themselves as shy. Rajesh, for

example, noted that he was shy at first with strangers. Albert described being shy when he started learning online, and being unsure about how he would communicate in online courses. John was shy communicating in person but noted that he was funnier and more outgoing online. Interaction taking place asynchronously, through text, and without visual components, as opposed to interaction on the spot in face-to-face classes, might have suited John in particular. He described himself as preferring online to face-to-face interaction and being funnier and more communicative online.

In terms of constraints of asynchronous, text-based interaction in online courses, Albert and Dina commented that there were no facial expressions to aid understanding. As Dina observed, text-based explanations could be harder to understand than oral explanations, because written language can be more formal.

Regarding constraints related to writing in English, Albert felt that, as an international student who was an EAL speaker, he had to pay attention to his writing, particularly in online courses. Albert noted that there could be difficulties for international students in online courses related to the time needed to think and write in English. His limited English language abilities resulted in difficulties expressing his thoughts when crafting text-based messages for discussions.

Synchronous Interaction

Rajesh, John, and Albert referred to wanting some text- or voice-based synchronous interaction, in particular with professors, for example in office hours where students talk with professors. John wanted "instant" chat with professors and use of

voice. Albert also wanted immediacy when interacting with others in online courses. Khalid wanted use of voice synchronously, in real time, with other students. Albert referred to the possibility of relying on asynchronous voice recording in online courses. This was a feature that was available in the Chinese discussions that he used, outside of learning. In relation to other tools for learning asynchronously, John and Dina suggested adding videos to online courses, such as through videotaped lectures.

In terms of norms, the students' courses relied on asynchronous interaction. Therefore, they could not fulfil their object of having synchronous interaction, in the sense of interaction that replicated real-time learning in face-to-face settings. For example, the students referred to the entire or almost entire lack of opportunities to interact synchronously, in real time. None of the students' courses integrated voice-based synchronous learning. In terms of synchronous text-based chat, Dina and Rajesh did not have it in their courses. Before starting to learn online, John had expected that his courses would include synchronous learning, but they didn't, and he considered his online learning "boring" as a result. Albert referred to not having opportunities to practice English listening skills in his courses. Albert, Rajesh, and John described ways in which synchronous interaction could benefit international students in online courses, such as to help them better understand professors' expectations, as well as for group work.

There were references to sporadic use of text-based chat taking place outside of the students' online courses. John used chat for course-related purposes, but not the chat feature available within his courses. He referred to an occasion when a Chinese student

contacted him and they communicated through chat. In addition, he was also in contact through MSN with a supervisor in one of his courses. In Dina's courses, some students provided their contact information for chat in MSN. Albert and his classmates used email in real time, as if it was synchronous chat (instant messaging), for the purpose of group work.

Students commented that one of the constraints of studying entirely or mostly asynchronously, without real-time interaction, was the inability to receive replies or feedback "immediately," "instantly," "on the spot," "at once," "right away," "any time," and "then and there." Khalid and John referred to waiting for days for replies from professors to questions sent by email or through course discussions. Waiting for replies could be a source of worry for the students, as Albert noted when he referred to sometimes feeling "helpless" in his online courses.

Albert's use of email in real time with other students, as if it was synchronous chat (instant messaging), reflected a desire for immediacy that he did not have with asynchronous learning. He would have liked to use text-based chat with other students for group work, but, because they did not have this synchronous tool within their course, they used email synchronously instead, sending each other email messages in real time.

The international students expressed a desire for opportunities to interact in real time in their online courses, but the availability of a feature such as a chat tool for synchronous communication did not guarantee its use. Students in Khalid's courses used chat for meetings, to discuss group assignments, and chat was in fact his favourite tool. However, he described chat being used for rigidly timed interactions. In relation to their

courses, John and Khalid commented that synchronous interaction might help online students get to know other students.

Despite the flexibility of online, asynchronous courses, Dina explained that she would prefer to take on-campus courses supplemented by online components, rather than taking courses delivered entirely online. Albert preferred combining online and face-to-face learning. The students enrolled in online courses to benefit from this flexibility in learning, but, except for John, they did not prefer online over on-campus courses. In contrast with the other students, John preferred online to face-to-face interaction in general and he also had previous experience with online learning in a postsecondary setting in Canada. These personal characteristics might have made him attuned to online learning.

Students referred not only to having synchronous interaction, but also to having asynchronous interaction as a way to recreate real-time presence, such as with voice recording and video. Students' suggestions about adding voice recordings and videotaped lectures to online courses referred to ways to approximate face-to-face learning, through listening and, in the case of videos, through visual components as well. For example, Dina proposed presenting content through video in online courses, rather than exclusively through text. John proposed use of videotaped lectures. Rajesh found useful the DVDs available in one of his courses, because they gave him a sense of being in a classroom and he could follow the professors' explanations. The videos were available in the form of DVDs with the professor lecturing and doing problems on a board.

Time and Place Flexibility

All participating students identified time flexibility as an object for enrolling in online courses. The students emphasised that, by learning online, they were able to decide when and what days of the week to study. They could avoid scheduling conflicts, as Albert explained. In addition, for Rajesh, Albert, and Dina, taking online courses to fulfill some of their program requirements represented a strategy to manage heavy course loads. For example, for Rajesh, taking online courses when he was on a work term was a way of avoiding having a very heavy course load during other semesters, when he was not on a work term.

Albert and Rajesh did not opt to take online courses because they thought that they would prefer learning online. For example, Albert originally registered for an on-campus course but, because of a schedule conflict, he was forced to take the online version of the course. Rajesh viewed taking online courses as his only option while he did Engineering work terms, if he wanted to avoid having to take many courses on semesters when he was not on a work term.

Place, and not just time flexibility, was an important reason for Khalid, Dina, and Albert to enrol in online courses. Khalid studied on campus in his first semester and then decided to take all his courses online in the winter because of issues related to weather and lack of transportation to the campus.

International students might benefit from the place flexibility of online learning for reasons besides weather and transportation, as Dina's and Albert's comments indicated. Both students availed of the place flexibility afforded by online courses by

continuing their studies when they spent periods of time in their home countries. However, as Dina and Rajesh explained, international students might not fully benefit from this place flexibility when studying in their home countries, if they are faced with delays when receiving course materials by mail.

Social and Cultural Interaction

This theme captured students' object of having social interaction as well as cross-cultural exchange. In terms of social interaction, one object for Khalid in his online courses was making friends. When he started these courses, he saw them as an opportunity for students to create their own social network online. As regards cultural interaction, Albert associated studying abroad with the opportunity to learn about Western culture through interaction with domestic students. He commented that his community of friends was not in Canada, but that international students like him studying in Canada wanted to make Canadian friends. Khalid wanted to feel involved in the university community. For him, online learning was motivated, not only by objects such as time flexibility, but by having cultural interaction as part of the university experience, for example by promoting his culture.

With respect to social interaction, the international students considered that there were fewer opportunities in online than in face-to-face courses to meet and interact socially with other students. It could take longer in online courses to start interacting with others, as Dina commented. She also explained that making friends was easier on campus, because she could see students' faces. She did not previously know any students

when she started learning online, whereas, in her on-campus courses, she might have known students from other on-campus courses. Dina and Albert explained that making friends was more difficult in online than on-campus courses. Albert indicated that he could have more Canadian friends in on-campus than online courses. He also argued that it was hard to make friends through email. Rajesh noted that his online courses had many students and he indicated that learning online did not lend itself to making friends. He felt closer and was more acquainted with students in his on-campus courses, particularly those in his cohort, who started studying Engineering at the same time.

The norms in the international students' online courses did not favour socialising, but, instead, interaction was mostly course-related. John commented that, other than talking about course-related matters, students talked only about the weather in his online courses. Albert saw online students as not being interested in knowing others and socialising, but focusing just on studying. In some cases, there were references to student anonymity in online courses. Khalid explained that his online course mates did not know him. He found that, in his online courses, students might not even know that he was an international student, so he felt a need to introduce himself as an international student. When Rajesh took online courses, he knew some of the other international students who had previously taken on-campus courses with him, but, in general, online students were "just names" to him.

As illustrated by Khalid's experiences, international online students who register for online courses and who have social interaction as an object may find that other online students do not engage in interacting socially with others. Khalid explained that his

attempts to engage in socialising, to "break the ice" and "push" interaction, contrasted with the behaviour of his online peers. Khalid described students' use of chat for group assignments in his courses as rigid and formal, rather than for social interaction. His expectations that the students in his online courses would create their own social network were not fulfilled. Students did not use the "Café" discussion section that was designed for them to interact on non-course-related matters. Khalid felt that his attempts to initiate social interaction were not reciprocated, for example when using chat for group assignments. He interpreted that the other online students were focused on their assignments and marks, rather than on socialising. He shifted his object and eventually concentrated only on course-related matters.

Khalid was the student who focused most on social interaction, as he emphasised the explicit attempts he made to initiate social contact with online peers, whereas the other students referred more, in general, to lack of social interaction in their online courses and difficulty in making friends. As an international student in online courses, Khalid hoped for social and cultural interaction but, for the other online students in his graduate Education courses, the main object might have been time flexibility instead. This different emphasis might be explained, for example, by students' professional commitments because, as Khalid noted, the students in his online courses worked as teachers.

Albert and Khalid contrasted online and on-campus courses with respect to learning about culture. Albert indicated that he could learn more about Western culture in on-campus than in online courses. Khalid felt that the object of cultural interaction

was not shared by the other students in his online courses, as reflected, for example, in his unsuccessful attempts to initiate interactions that were not course-related. In contrast, he commented that classmates in his on-campus courses expressed an interest in his culture.

Course design might have contributed to students' feeling that cultural interaction may not be fulfilled in online courses. Rajesh and Khalid noted that there was a lack of consideration in their courses of the fact that some cultural references might not be familiar to international students. However, with respect to unfamiliar cultural references, Khalid noted that he had the opportunity to research them before contributing to discussions, whereas, in on-campus courses, his participation was limited when unfamiliar cultural references were used. Rajesh emphasised that he felt expected to know Canadian references in his courses. His online courses did not have topics related to different parts of the world. He indicated that his on-campus courses did not have a global perspective either. Khalid commented that his online Education courses were based only on the educational system in Canada. Rajesh mentioned that international students may not understand slang. Albert referred to having difficulties understanding idioms used in discussions in his online courses. In addition, Albert referred to a cultural difference that could manifest itself for international students in online courses. He noted that it might not be as easy for Chinese students as for domestic students to express opinions, particularly in online courses.

Teaching Presence

The label of *Teaching Presence* was used to capture students' object related to: the articulation and clarification of expectations; course organisation; design of discussions; provision of support in relation to writing; availability of professors to answer questions and provide feedback; and selection of content. The students related most of these elements of course design, delivery, and provision of support with the role of the professor in establishing a defined teaching presence; however, they could also relate to the role of instructional designers and support personnel.

Students wanted online professors who were active and present in the sense of making expectations clear, as indicated in comments by Rajesh, Albert, and John. Albert noticed that participation expectations in discussions were unclear. Albert and John indicated that, in their courses, it was not made explicit how professors graded students' contribution to discussions. Rajesh highlighted the importance of interaction with professors in helping him understand their expectations. To clarify professors' meanings, Albert and his classmates would interact through the discussions in their online courses.

If the students' courses had been different, the design and administration of learning could have better suited some of the students' learning preferences. Khalid and Albert favoured group work, but they experienced difficulties. Their comments suggested that, had more guidelines and support for group work been provided, their preference for this form of learning might have been better suited in online courses. Albert would have preferred having a chat tool for group work, rather than using email

with members of his group. Khalid used course chat for discussing group assignments with other students but expected interaction to be less formal and more social than it was.

Albert and John referred to spending considerable time trying to find information in multiple discussion threads. Albert found discussions too "wide-ranging." He compared unfavourably the features available in the discussions in his online courses with those in the Chinese discussions that he used. He indicated that discussions in online courses could be improved by providing more options for viewing discussion threads. Rajesh described discussions in his courses not so much as being disorganised, but as not promoting two-way interaction, because students were just "throwing ideas." He posted messages in discussions only because they were required. In contrast with Albert's and John's comments on their difficulties finding information, Dina noted that she benefitted from her course being organised. She was thinking of taking another course online which other students had recommended to her because it was well organised.

Albert explained that, when he started online courses, he had many deadlines in the courses and even missed some quizzes because sometimes he could not find the relevant information. He was also confused by the various approaches to organising information in his different online courses. Yet, a positive outcome of online learning for Albert was that he eventually became a more organized student. For example, he created his own calendar to indicate all the deadlines for his courses. John indicated that "self-control" was needed in online courses. Rajesh noted that his learning took longer online than in on-campus courses. He described himself as a better student in on-campus

courses. While Rajesh was able to benefit from time flexibility in online courses, he needed to exercise more responsibility over his learning and to pace himself more. This responsibility was especially necessary if he wanted to obtain the high marks he was used to in on-campus courses. However, he did not receive a mark higher than 60% in online courses. In contrast, Dina and Khalid, who also wanted to receive good marks, did receive them in online courses. Rajesh's explanation to account for his poorer performance was that online courses did not cater to his learning as much as those taken on campus, because he did not have as many required regular submissions or evaluations to help him pace his work.

In terms of support with writing, Dina felt that professor support was limited in her online course. When preparing assignments for online courses, Dina and Albert sought help from university writing support services available through the university library. Albert described receiving information that specifically targeted some of the writing difficulties experienced by EAL speakers, such as use of punctuation. He noted that some online professors focused on English grammar. Rajesh did not use writing support services for his online courses because he was not sure if they were available only for students in on-campus courses or also for those learning online. In terms of technical support, only Albert referred to needing it once, and he used it through chat.

Rajesh found that information provided in his courses, within the learning management system, was not enough. He explained that additional resources could have been provided, such as by means of external online links, to harness the potential of the Internet for access to information.

Students expected the professor to be interactive and very present in the learning environment, in the sense of being responsive. Dina would contact online professors when she had questions about course content. She relied on the professor's feedback to help her learn. When she enrolled in online courses, she expected to have as much interaction with the professor as in face-to-face courses. Khalid relied on his professor first when he had questions, both in on-campus and online courses. When starting online courses, he first asked his professors for a face-to-face appointment. He referred to his view of learning as one that emphasised the professor interacting with students. He wanted to have interactive learning and a "friendly discussion" with his professors. John emailed professors in online courses for any questions he had. John and Albert expected the professor to be very present and available to answer questions. Rajesh also wanted to interact with the professor for support when he had questions about online courses.

Students viewed the online professor in the role of a provider of feedback and also a trouble-shooter who answers students' questions. For this reason, delayed or lack of feedback or answers was a source of concern for them. In some cases, their online professors did not answer questions or provide sufficient information or guidance as to where information was available. Rajesh indicated that he started relying on students instead of professors because he might not receive replies from online professors. In on-campus courses, however, he would have relied more on the professor for support. Khalid relied on his professor first when he had questions, but found one of his online professors less active than he would have liked. John noted that some professors were "missing" in online courses.

Independent Learning

The division of labour in the international students' online courses was one in which the professor was not at the centre. In online discussions, for example, the students could have direct access to other students without the professor being at the centre of their interactions. Albert and Rajesh communicated with peers in course discussions to clarify professors' comments in the course. Through email, Dina initiated private interactions with other students in relation to her course. Although forms of contact with peers took place mostly asynchronously, students could use synchronous online tools outside of their courses to contact others, as illustrated in John's use of MSN with two Chinese online students.

In the same way as the professor did not have to be the sole provider of support in online courses because other students could be accessed directly, online resources could also be accessed independently to support learning. These included the resources accessible to students in their courses for review any time, as learning was asynchronous. For example, John's preferred tool in online courses was the content section, where course notes were provided as well as a course schedule with important dates. Most importantly, the Internet offered independent access to vast information, outside of the context of the students' online courses and of the university library web page. Rajesh, Albert, and Khalid commented on being able to access any kind of information online. Rajesh's comments in particular illustrated the opportunities that students had for direct access to information online. He searched for information about course topics

independently, if he found that there was not enough material provided in his online courses.

The opportunities for independent learning through contact with peers and access to online resources could, in some cases, be unplanned and occur simply out of necessity. With respect to independent access to online resources, Rajesh noted that, in some cases, he needed to access online resources other than those provided in his courses, suggesting that his courses were designed as self-contained units. He explained that the courses could have harnessed the potential of the Internet more for access to information, for example by including more links to online resources outside of courses. John described relying on Google and Wikipedia to find answers on his own to course questions. There were references to students' first-language use to access online resources to support their learning. Albert described searching for online resources in Chinese to help him understand academic concepts used in his courses.

In relation to relying on other students to support learning, contact with peers, including other international students, was especially important when the students felt that their online professors were not always providing the information they needed, as happened to John and Rajesh. Rajesh noted that he could no longer have the professor as "fall back" when learning online, compared with learning in on-campus courses, where he would contact the professor more. In addition, the professor was not a "fall back" in online courses because, in discussions, Rajesh could have his questions answered by other students rather than by professors, or before professors answered. Not having the professor as a central figure contrasted with prior educational experiences that the

students described. When the professor was perceived as "missing" or as less present than in on-campus courses, students could directly ask questions to, interact with, and receive support from their peers in their online courses.

Summary of the Chapter

The chapter presented a cross-analysis of the portraits of the international students' activity systems to identify themes. The theme of *Asynchronous, Text-Based Interaction* referred to the affordances and constraints related to the norm of asynchronous, text-based interaction in the students' online courses. Affordances for the students as EAL speakers included the opportunity to: organise thoughts in advance when writing messages; revise the accuracy of their English writing; review content any time; and look up unfamiliar cultural references in advance. Constraints included the time needed to think and write as well as lack of facial expressions.

Synchronous Interaction related to students' object of interaction replicating real-time learning face-to-face. For example, synchronous text- or voice-based interaction represented ways to recreate features of face-to-face learning, such as real-time interaction. There were also references to adding asynchronous video and voice recordings, which would also reflect elements of the face-to-face setting, by recreating real-time interaction and, in the case of videos, through use of visual cues.

Time and Place Flexibility captured the object of flexibility in learning which constituted students' motivation for enrolling in online courses. The courses fulfilled students' object of time flexibility in learning, to avail of any-time study, manage heavy

course loads, and avoid scheduling conflicts. Some students availed of place flexibility due to weather and transportation issues and while spending periods of time back home.

Social and Cultural Interaction captured students' object of having social interaction in their courses as well as cross-cultural exchange. Regarding social interaction, the students considered that there were fewer opportunities in online than in face-to-face courses to meet and interact socially with other students. Cultural interaction could include making Canadian friends and learning about Western culture. Course design might have contributed to a feeling that cultural interaction may not be fulfilled, for example, because of lack of global topics and use of unfamiliar cultural references.

The label of *Teaching Presence* was used to capture students' object related to: the articulation and clarification of expectations; course organisation; design of discussions; provision of support in relation to writing; availability of professors to answer questions and provide feedback; and selection of content. The students related most of these elements of course design, delivery, and provision of support to the role of the professor in establishing a defined teaching presence; however, they could also relate to the role of instructional designers and support personnel. For example, with respect to how courses were designed, and to discussions in particular, some students referred to experiencing difficulty finding information. The students' comments in relation to teaching presence emphasised in particular the importance of feedback from the professor.

Independent Learning related to the division of labour in the students' courses, with an emphasis on peer-to-peer learning and on direct access to online resources and

tools for independent learning. In discussions, for example, the students could have direct access to other students without the professor being at the centre of their interactions. In addition, the professor did not have to be the sole provider of support because online resources could be accessed independently to aid learning. The purpose of the next chapter is to address the third objective of the study, which was to analyse the themes using AT's five principles.

Chapter Seven

From Tensions to Transformations: Activity Theory Analysis

Introduction

The purpose of this chapter is to address the third objective of the study, which was to analyse the themes using AT's five principles, with a focus on contradictions and the identification of opportunities for positive transformations in the activity of learning. As Yamagata-Lynch (2010) noted, a theme-based approach to analysis can be combined with further "systemic analysis with activity systems" (p. 7) in qualitative studies guided by AT. While traditional qualitative data analysis allows for the identification of salient thematic issues surrounding the phenomenon under study, using an AT lens as well helps communicate dynamic interactions in the data set (Yamagata-Lynch, 2003). The analysis involved considering the themes in relation to AT's five principles. These are: 1. the activity system as the main unit of analysis; 2. multivoicedness; 3. historicity; 4. contradictions; 5. expansive learning. The analysis focused more extensively on expansive learning. The analysis highlights how students' learning could be expanded and transformed to overcome contradictions and to envisage a broader or wider range of possibilities.

AT's first principle states that the main unit of analysis in AT is the activity system (Engeström, 2001). The activity system, with its components (subject, tools, object, outcome, community, division of labour, and norms), is used to guide analysis in AT research. The second principle, multivoicedness, refers to the multiplicity of

perspectives, interests, and traditions in an activity system (Engeström, 2001). The third principle, historicity, refers to examining the diverse histories that individuals carry with them and the history of the activity systems of which they are part (Engeström, 2001). With respect to the fourth principle, AT views activity systems as characterized by contradictions. Contradictions can be considered as tensions that can help understand innovation in activity systems (Barab et al., 2002). Activity theory does not view contradictions in a negative sense, as they can result in change in practices (Engeström & Miettinen, 1999). The fifth principle, expansive learning, refers to the potential for expansive transformations in activity systems through the resolution of contradictions (Engeström, 2001).

The Activity System as the Main Unit of Analysis

The literature on international students has highlighted the complexity of their non-academic (e.g., Arthur, 2008; Guilfoyle, 2006; Mori, 2000; Urban & Orbe, 2007) and academic lives, particularly the linguistic and cultural dimensions of their learning (e.g., Briguglio, 2000; Sawir, 2005; Tatar, 2005; Zhu & Flaitz, 2005). In addition, when learning is supported by use of technology, such as in online courses, the challenges these students face can become intensified (Pincas, 2001). The complexity of the international students' learning in online courses could be captured because AT's focus on the activity system as the unit of analysis, as opposed to just on the student (Liaw et al., 2007), means that individuals are considered within the system(s) of which they are part, not in isolation (Kuutti, 1996). AT offers a perspective that does not focus only on the

relationship between tools and their users when studying technology-mediated learning (Westberry, 2009). As Barab et al. (2004) explained, drawing on AT literature (e.g., Engeström, 1987), AT allows for a focus on "the contextualized activity of the system as a whole" (p. 27).

The themes presented in the previous chapter were focused on separately; however, they can be interpreted as interrelated when considered in relation to students' activity systems. These dynamic interrelations are represented diagrammatically in Figure 7, which depicts the mapping of the study's themes onto activity system components.

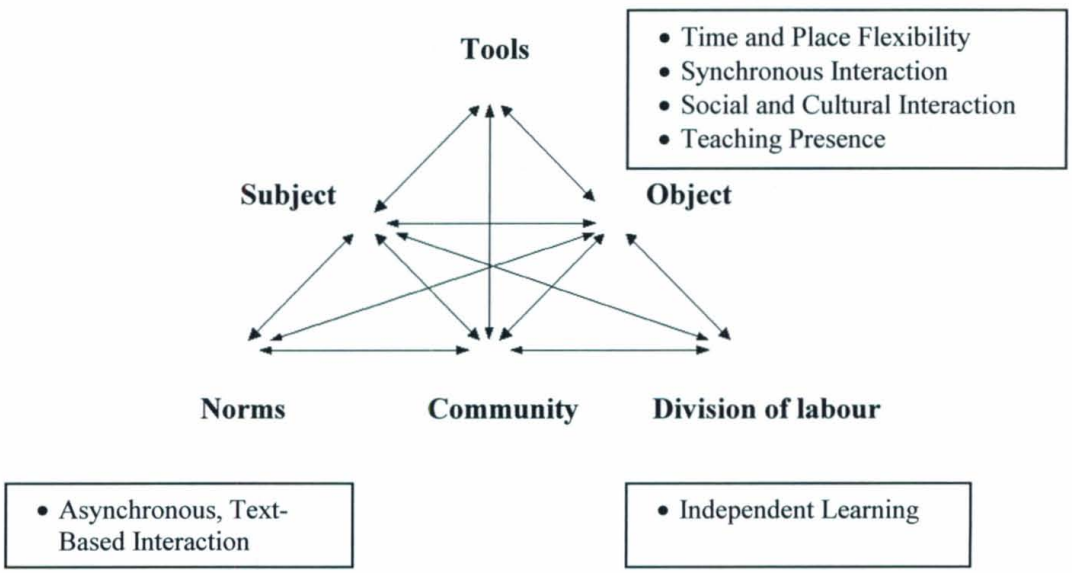


Figure 7. Themes mapped onto activity system components

Time and place flexibility was made possible through the norm of asynchronous interaction and the corresponding tools (such as text-based discussions) used to support that interaction. In contrast with *Time and Place Flexibility*, the themes *Synchronous Interaction*, *Social and Cultural Interaction*, and *Teaching Presence* captured objects that reflected students' cultural-historical conceptions of learning, with origins in their face-to-face learning settings. *Synchronous Interaction* highlighted ways in which the online setting could replicate real-time learning in face-to-face settings, such as through use of synchronous voice and asynchronous video in online courses.

Social and Cultural Interaction highlighted the fact that students associated their face-to-face courses more than their online courses with opportunities for engaging in this type of interaction. The theme of *Teaching Presence* highlighted elements, such as having questions answered immediately, that students associated with a defined teaching presence in their face-to-face courses and they would have liked to have in the online courses. However, the division of labour reflected a form of learning in which students had to rely more on peer-to-peer learning and on online access to resources and tools for independent learning.

Multivoicedness

Multivoicedness refers to different perspectives on the object (Blin, 2005; Kerosuo, Kajamaa, & Engeström, 2010; Russell & Yañez, 2003). Objects can be considered as different motives (Nardi, 1996) or individual purposes (Bellamy, 1996). Engeström (2001) referred to multivoicedness in AT in relation to the importance of

considering different interests and points of view. In relation to the activity of learning in the international students' online courses, there could be different perspectives on the object, in the sense that objects could be articulated differently by different people. In addition, the international students' objects could be different from those of domestic students.

In terms of the individual objects of the international students, the most common object was time flexibility in learning, which constituted their main motivation for enrolling in online courses. For some students, however, flexibility in learning could include spatial, and not just temporal, flexibility. In relation to social and cultural interaction, the object could be articulated differently, such as in relation to making friends or to learning about Western culture. Regarding synchronous interaction as an object to replicate elements of face-to-face learning, the focus could be, for example, on having immediate replies and feedback, such as through the inclusion of synchronous voice, or on having visual cues to aid understanding, such as through the integration of video lectures. In terms of teaching presence as an object, all students referred to the importance of feedback and replies from the professor. However, some also emphasised the importance of clarity and explicitness of expectations as well as clarity in terms of the organisation of the course, in general, or of specific course components such as discussions.

It was beyond the scope of this study to examine the objects of domestic students. However, we can hypothesize that engaging in cultural interaction, in the sense of learning about other students' cultures, might be more of an object for international

students in online courses than for domestic students. For one of the international students, cultural interaction was associated with cross-cultural exchange and with promoting his culture. However, domestic students might not prioritise this type of interaction. It cannot be assumed that the design and teaching practices or general educational policies adopted in institutions for online learning will suit international students' objects the same way as for domestic students.

Historicity

As Sawir (2005) noted, in reference to international students, it is important to consider that "all learners are affected by what they already know, and how they have learned to learn" (p. 570). Culturally and historically, the reference point for teaching and learning for the international students was face-to-face settings. The objects highlighted in the themes of *Synchronous Interaction*, *Social and Cultural Interaction*, and *Teaching Presence* were rooted in the students' previous learning experiences in face-to-face settings in general. In addition, as highlighted in the theme of *Teaching Presence*, students were influenced by learning and teaching from their own countries.

One commonality among the students was the object of having a defined teaching presence, such as what they were used to in their previous learning. However, in their online courses, the division of labour did not favour a defined teaching presence. Moore (1980) referred to the division of labour in "independent study" forms of learning, such as distance learning, noting that students and instructors moving into these forms of learning "tend to introduce to their relationships expectations about roles and authority

that they derived from other educational experiences" (p. 29). In AT terms, this transposition of expectations and roles would occur because, as Engeström (2001) noted, individuals in activity systems carry with them their own histories.

From the perspective of how learning has historically taken place, moving into an asynchronous learning environment meant that elements which students typically associated with learning in face-to-face setting were lacking. In face-to-face courses, students and professors would be physically co-present, which meant that interaction would be synchronous and supported by visual cues. In contrast, the online courses in which the international students were enrolled had been designed and taught at their university as courses in asynchronous, mostly text-based mode. As with the object of synchronous interaction, the object of social and cultural interaction may have been more easily fulfilled in face-to-face learning settings. Social and cultural interaction may occur face-to-face through physical co-presence, whereas it might need to be formally and intentionally designed to be part of online learning settings.

Students' learning underwent changes when moving into online courses because these courses were characterised by temporal and spatial flexibility. However, in face-to-face settings, the activity system of students has been defined traditionally by norms such as a "standardized time schedule" (Engeström, 1998, p. 80). The international students also came from a tradition in these settings that corresponds to Miettinen's (1999) description of teaching and learning as being historically defined by "physical factors… such as… the classroom as physical space" (p. 328). Yet, as Russell and Yañez (2003) observed, students moving from one educational activity system to another can find that

the "rules of the game [are] different" (p. 347). In educational settings, as Westberry (2009) explained, students "carry their past within them, drawing on it as a resource to make meaning based on what has come before" (pp. 232-233).

Contradictions

Barab et al. (2002) referred to contradictions as systemic tensions that can help understand innovation in activity systems. Contradictions have also been described as resulting in dilemmas, when "two messages or commands… deny each other" (Engeström, 1987, p. 174). They generate double bind situations in everyday practices (Engeström et al., 2002), when individuals face contradictory demands (Engeström, 2001). As Russell and Yañez (2003) commented with respect to how contradictions are experienced, "people are often at cross-purposes" (p. 341).

Analysis of the portraits of the students' activity systems resulted in the identification of three contradictions with cultural and historical roots in face-to-face learning settings. As Engeström (2001) noted, contradictions are "historically accumulating structural tensions within and between activity systems" (p. 137). Engeström explained that an activity system may adopt a new element from the outside, such as a new technology, which may lead to contradictions when old elements, such as the division of labour or norms, clash with the new one. These contradictions can "generate disturbances and conflicts, but also innovative attempts to change the activity" (p. 137).

The three contradictions or tensions are discussed separately in the following sections. They are also represented in Tables 8 to 10. To illustrate the tensions, each table presents a summary, in aggregate form, of the relevant elements from the depictions of individual students' activity systems that were presented in Chapter Five. The tables are composites of elements of the students' activity systems; therefore, they include elements that were common to all five students as well as others that may have been specific to individual students but were relevant in terms of tensions.

Tension One: Tension Between the Object of Synchronous Interaction and the Norm of Asynchronous, Text-Based Interaction. Table 8 depicts the contradiction or tension between the object of synchronous interaction and the norm of asynchronous, text-based interaction.

Table 8

Summary of tension one

(Norms) Asynchronous, Text-Based Interaction	(Object) Synchronous Interaction
• Medium is mostly or exclusively asynchronous, text-based; • No facial expressions to help understand; • No means to see the professor; • No answers/feedback from professors 'on the spot,' 'right away;' • No real-time, 'immediate' interaction; • Text-based medium, without video for explaining content (e.g., videotaped lectures); • No voice recordings; • No use of voice/listening to practice English; • Emphasis on writing requires students to think when writing.	• Answers/feedback from professors and interaction 'at once,' 'right away,' 'instantly;' • Real-time voice/chat with professors, e.g., online office hours; • Video (e.g., videotaped lectures), rather than an all-text environment, and more features, such as voice recording.

There was a tension or contradiction between, on the one hand, the object of synchronous interaction and, on the other hand, the norm of asynchronous, text-based interaction. Synchronous interaction was an object for the students, in the sense of interaction that replicated real-time learning in face-to-face settings, where physical co-presence and visual cues are present. The students' online courses could have been designed differently to support this type of interaction; for example, they could have included tools other than those supporting asynchronous, text-based interaction. Such tools might include, for example, voice-based tools for synchronous interaction as well as asynchronous voice recording and asynchronous video. However, the courses relied on asynchronous, text-based interaction as a norm.

Tension Two: Tension Between the Object of Teaching Presence and the Division of Labour Emphasising Independent Learning and the Norm of Asynchronous, Text-Based Interaction. Table 9 depicts the contradiction or tension between the object of teaching presence and the division of labour favouring independent learning as well as the norm of asynchronous, text-based interaction.

Table 9

Summary of tension two

(Norms) Asynchronous, Text-Based Interaction	(Object) Teaching Presence
• Need for student self-pacing, self-control, responsibility; • Professor cannot be used as 'fall back;' • Emails to professors may not always be answered; • Little information/guidance from professors; • Some online professors 'missing,' 'on the side;' • Some professors less interactive than others; • Unclear participation expectations and grading in discussions; • Sometimes insufficient material in courses; • Students can be 'throwing ideas' in discussions; • Discussion postings made because they are required; • Discussions can be too wide-ranging; • Information may be unstructured, hard to find; • Some courses may be well organised; • Lack of regular evaluations, submissions, quizzes; • Many deadlines; • Variety of online course structures, teaching styles; • Professor support with English writing may be limited.	• Interactive learning, professor available to answer questions; • Understanding what professors mean/expect; • Online communication with professors; • Explicit evaluation of participation in discussions; • Regular evaluations, submissions, quizzes; • Comprehension checks, explanation of steps; • Organised course; • Peer-studying, group work.
	(Division of Labour) Independent Learning
	• Asking questions to other online students, e.g., to discuss what professors meant; • Receiving online support via discussions/ email/MSN; • Receiving support from international students; • Asking online professors for initial face-to-face meeting; • Receiving answers from students, not always from professors; • Finding answers to own questions if not getting answers from professors; • Searching online/reading first, asking professor as a second resort; • Asking group members and friends for help; • Being unsure if there is writing support for online students; • Using writing support service via the library; • Receiving language support from some professors; • Using the technical support service through chat.

The division of labour in the students' online courses emphasised independent forms of learning. For example, students could, in some cases, feel that they had to resort to asking questions to other students in their online courses. The discussions provided interaction and support among students, more than between the professors and students.

There were also ways in which asynchronous, text-based interaction as a norm in the online courses did not support a defined teaching presence. For example, receiving text-based replies and feedback in a mode that was asynchronous could result in a feeling of delayed responses from the professor, in contrast with immediacy in interaction in face-to-face courses. Although some students indicated that their online professors (or, at least, some of them) interacted extensively with students and provided feedback, these students still referred to lack of immediacy when learning online.

The contradiction or tension had cultural-historical roots that may be traced to students' previous and current learning in face-to-face contexts. In face-to-face learning, students might have been used to a defined teaching presence, culturally and historically. However, when they moved into online courses, the division of labour and norms did not favour the same teaching presence. In contrast with face-to-face courses, the professor may not be the sole or main source of information. Therefore, student responsibility and independence was needed when learning online.

Tension Three: Tension Between the Object of Social and Cultural Interaction and the Norm of Asynchronous, Text-Based Interaction. Table 10 depicts the contradiction or tension between the object of social and cultural interaction and the norm of asynchronous, text-based interaction.

Table 10

Summary of tension three

(Norms) Asynchronous, Text-Based Interaction	(Object) Social and Cultural Interaction
• Easier making friends seeing faces, on-campus; • It takes longer to start interacting online; • It can be hard to make friends, e.g., through email; • Nobody talks about their lives; • Students may focus strictly on the subject; • Students may not be interested in knowing others; • The online medium is not one to make friends; • Student interactions may be formal, rigid; • Chat room may be for scheduled meetings only; • Only Canadian topics, of which knowledge is expected; • Not as easy to express opinions as for domestic students; • Use of slang and idioms.	• Getting to know students, 'breaking the ice;' • Making friends in online courses; • Making Canadian friends; • Learning about Western culture; • Promoting one's own culture; • Cultural exchange; • Being more involved in university community.

The norm of asynchronous, text-based interaction did not support the object of social and cultural interaction. This interaction might occur spontaneously and informally in face-to-face learning settings, where students are physically co-present, in contrast with online courses. Social and cultural interaction could be hindered in online courses because, for example, other online students might not know that a fellow student was an international student. Courses were not designed and delivered to promote cultural interaction, as they could lack global topics and include cultural references that could be unfamiliar for international students, and also simply were not designed to facilitate social interaction in general.

In the face-to-face learning setting, social and cultural interaction could be facilitated through real-time physical co-presence with visual cues. The students might

have opted for face-to-face courses, instead of online courses, to potentially have more opportunities for social and cultural interaction. In their context of learning, however, this choice would have meant compromising the object of time and place flexibility.

Expansive Learning: Opportunities for Transformations in Activity

Expansive learning, the fifth principle in AT, refers to the potential for expansive transformations in activity systems through the resolution of contradictions (Engeström, 2001). Contradictions present "a constant potential for change… for transforming—re-mediating—activity systems" (Russell &Yañez, 2003, p. 340). Nelson (2002) commented that contradictions can result in expansive learning when they are acknowledged and resolved. By expansive is meant an expansion in or broadening to encompass a wider range of possibilities for the activity of learning. Thus, each of the three tensions or contradictions identified becomes a starting point for consideration of a broader range of possibilities for international students learning in online courses. As Engeström (1996) noted, activity systems contain "buds or shoots of [their] possible future" (p. 68).

The following sections articulate specific transformations that could take place in the activity system of the international students as a result of resolving and acknowledging the contradictions or tensions. Each is presented separately. They are discussed in relation to problems and solutions that have been identified in the related literature. The opportunities delineate expanded or broadened forms of learning to include more possibilities than previously envisaged. The outcomes of this new

expanded form of learning are also described. The expanded outcomes are associated with specific tensions. However, the outcomes will also result from resolution or acknowledgement of the three tensions.

Table 11

Opportunities for expansive learning (EL) and transformations in the activity of learning as related to the three tensions

Tensions	Opportunities for EL and Transformations
Tension 1: Tension between the object of synchronous interaction and the norm of asynchronous, text-based interaction.	**Expanded Object** • Preference for asynchronous interaction. **Expanded Norms** • Face-to-face and online synchronous interaction in online courses. **Expanded Tools** • A greater variety of media. **Expanded Outcome** • Appreciation for and satisfaction with online learning; • Engagement.
Tension 2: Tension between the object of teaching presence and the division of labour emphasising independent learning and the norm of asynchronous, text-based interaction	**Expanded Object** • Preference for independent learning. **Expanded Norms** • Support and facilitation of independent learning; • Enhanced teaching presence. **Expanded Tools** • First-language online resources. **Expanded Division of Labour** • Enhanced language-related services and supports. **Expanded Outcome** • Independent learners; • High achievement.

Tension 3: Tension between the object of social and cultural interaction and the norm of asynchronous, text-based interaction	**Expanded Norms** • Cultural inclusivity; • Social interaction. **Expanded Community** • Networks of international and domestic students for social and cultural interaction. **Expanded Outcome** • Friendships, social connections; • Cultural inclusion.

Tension One.

Expansion of the object.

Preference for asynchronous interaction. The norm of asynchronous, text-based interaction offered affordances and a wide range of possibilities for learning. For example, the time delay associated with asynchronous interaction helped students compensate for missing linguistic skills and knowledge of cultural references. The language-related affordances of asynchronous interaction for the international students as EAL speakers included the opportunity to: organise their thoughts in advance and work in their own time when writing messages; focus on English accuracy in writing, for example, by using online bilingual or monolingual dictionaries; receive organised feedback in writing; revisit and review course content and discussions any time; understand content more easily; read online resources in the first language to understand concepts; and look up unfamiliar cultural references in advance.

The language-related affordances identified in this study are important particularly for international students because, as Park (2006) observed, writing is the most difficult area for these students. Online, international students who are EAL speakers have time to prepare written contributions and revise their English language. In

addition, these students benefit from having all course content and discussions available for review at any time in online courses (Thompson & Ku, 2005; Westberry, 2009; Zhao & McDougall, 2008). When learning asynchronously, another affordance is "easy resource sharing and easy record keeping" (Thompson & Ku, 2005, p. 44).

Some research comparing online and face-to-face communication has identified affordances of online asynchronous interaction for EAL students, such as: production of more complex language; improved writing skills; more equal student participation; and reduced anxiety (Schultz, 2000; Sullivan & Pratt, 1996; Warschauer, 1996). International students can feel more comfortable and find it easier communicating in writing online than through listening and speaking in face-to-face classrooms (Thompson & Ku, 2005; Ku & Lohr, 2003). Studies of international students in face-to-face classrooms have revealed that their participation might be restricted because of English language issues such as: lack of previous exposure to oral English (e.g., Sawir, 2005); perceived lack of second language competence (e.g., Briguglio, 2000; Morita, 2004); simultaneous note-taking and listening (e.g., Wong, 2008); the need for more time to process language; fear of producing inaccurate language; and participation in multiple-participant discussions (e.g., Zhu & Flaitz, 2005).

Other studies have found, as in the present study, that international students benefit from asynchronous interaction, in particular in discussions, and not just in relation to language-related matters. One of these studies was conducted in Canada by Spiliotopoulos and Carey (2005) with students using online discussions as part of a course for English language learners. The findings highlighted the role of discussions in

helping create a sense among students of being part of "a community whose members supported and motivated each other" (p. 107). Zhao and McDougall (2008) found that Chinese international students reported participating more in online courses, as they did not feel inhibited when writing as they might when speaking. In Thompson and Ku's (2005) research on international students from China and Taiwan, participants were not as involved in online as in face-to-face classroom discussions, but they "felt more comfortable expressing themselves on the online discussion board" (p. 43).

In Yildiz and Bichelmeyer's (2003) study of two online graduate courses, the authors commented that these courses provided international students who spoke EAL with "more opportunities to speak out and participate in the discussions than in face-to-face classrooms" (p. 189). The students participated in discussions as often as native English speakers, although international students' messages could be shorter because of the time needed for these students to write them. Students in a study of Asian international students conducted by Park (2006) indicated that, online, they could look for context when they found unfamiliar ideas or expressions in course materials. For that reason, text-based interaction in their online courses was "favorable and less threatening" (p. 101).

Speakers of EAL may also benefit from learning online asynchronously because, as Liang and McQueen (1999) noted, barriers related to feeling shy or embarrassed are partially removed online. When learning online asynchronously, international students have time to prepare in advance, as opposed to communicating on the spot, as in on-campus classes (Ku & Lohr, 2003). In contexts of oral participation in face-to-face

classes, Briguglio's (2000) study found that shyness was one of the reasons reported by international students for lack of participation. Chan (2011) commented on university students and communication mediated by computers, noting that this type of communication "is particularly attractive for those who perceive themselves as shy, but have the innate desire to interact socially with others" (p. 85).

Time flexibility has been identified as an important affordance of online asynchronous learning for international students (Park, 2006; Thompson & Ku, 2005; Zhao & McDougall, 2008). Thompson and Ku found that online courses provided these students with "the flexibility to study at any time during the week" (p. 43). Students in their study also benefitted from time flexibility "to balance their study time, to catch up on their work or to work ahead of time" (p. 43). Park referred to the ability of international students studying online to "control time, place, and pace in their learning" (p. 67).

Asynchronicity is pivotal to supporting time flexibility. In Liu's (2008) survey of international students at a university in the United States, more than two thirds of respondents indicated that the schedules of online courses were very flexible. With reference to Chinese students learning online, Chen, Bennett, and Maton (2008) commented that these students, like their Western counterparts, "appreciate the temporal and spatial flexibility afforded by online learning" (p. 309). In the general literature on online learning, some studies have identified the flexibility of online courses as one of the main reasons why students enrol in them (e.g., Braun, 2008; Mahoney, 2009; Northrup, 2002). Burton (2009) noted that online students "take online classes for external

factors—convenience, scheduling, or course availability—more so than for learning preference" (p. 10).

International students can be faced with monetary issues (Robertson et al., 2000) making them feel pressured to complete their programs expeditiously (Cadieux & Wehrly, 1986). In addition, as Guilfoyle (2006) explained, international students might feel a need to complete studies as soon as possible because of their "intrinsic motivations towards academic success in the host country conjoined with a sense of responsibilities for family relationships while their families remain at home" (Family Support section, para. 1). There can also be pre-transition influences (Arthur, 2008) which make international students feel a strong sense of responsibility for succeeding academically, such as parental pressure or community sponsorship. For this reason, asynchronicity, which affords time flexibility, is essential.

Besides availing of time flexibility, the students could avail of place flexibility, due to weather and transportation issues as well as while spending periods of time back home. As Zhao and McDougall (2008) argued, international students may consider place independence as one of the advantages of asynchronous online learning. Tseng and Newton (2002) referred to transportation as one of the concerns of international students in postsecondary institutions in the United States. With respect to Canada, research conducted on international students in eastern regions revealed concerns about difficulties related to weather and transportation (Lebrun & Rebelo, 2006).

Expansion of the norms.

Face-to-face and online synchronous interaction in online courses. International students may have negative attitudes towards online courses, even when they value the time and place flexibility of these courses (Chen et al., 2008). Park (2006) and Thompson and Ku (2005) indicated that some international students might prefer and benefit from learning in settings that combine online and face-to-face components.

Wang and Reeves (2007) found that students expressed a preference for face-to-face learning rather than synchronous online learning. Students indicated that online synchronous communication supported their learning better than they had originally expected, but it could not substitute for face-to-face interactions. Students would have liked to have regular face-to-face interactions to "get to know each other better and clarify some communication problems" (p. 349).

In a study conducted with international students learning online asynchronously, Park (2006) referred to students' perceptions of difficulties because of lack of facial cues: "Teachers might notice if [students] had a question or problem by their facial expression in a face-to-face class, but they had to… describe their problem in writing in the online learning environment, which [was] not very easy for them" (pp. 95-96). In their study of international students learning online synchronously, Wang and Reeves (2007) noted that lack of facial expressions meant that, compared to face-to-face classes, it was harder for professors to tell whether students understood or not. It was also harder for international students to understand other students' comments.

In addition to including some face-to-face interactions in online courses, synchronous online elements that mimic face-to-face interactions could be included. These types of interactions may be important where face-to-face interactions force a tension with time and place flexibility. One suggestion in Thompson and Ku's (2005) study was to use synchronous interaction by means of web cameras, so that students could see each other. Suggestions about online learning made by international students in Park's (2006) study included having office hours, whether online or in person, rather than communicating asynchronously through email with the professor and waiting for days for a reply.

Some studies of international students have referred to the benefits of integrating opportunities for synchronous interaction into courses, such as for prescheduled sessions with the professor and students (e.g., Shin, 2006; Tu, 2001; Wang, 2006). Synchronous interaction in online courses by means of voice might benefit international students who may perceive written communication as being formal. The formality of this type of communication, when compared to spoken English, was highlighted by international students in Zhao and McDougall's (2008) study.

Synchronous interactions between professors and students could help overcome constraints associated with asynchronous learning. International students in online courses, particularly Chinese speakers, have expressed a desire for prompt responses and feedback (e.g., Thompson & Ku, 2005; Tu, 2001; Zhao & McDougall, 2008). Chinese students in Tu's study believed that adequate response time for email messages sent to professors was one day or less. For these students, emails which were not replied to

promptly or were unanswered could "generate negative non-verbal cues[, i.e.,] the person does not care about the message" (p. 57). In the context of research conducted with Chinese international students learning online, Thompson and Ku referred to students' concerns about not getting immediate feedback from professors and from other students. Thompson and Ku noted that "Chinese students took [professors']… feedback seriously and demanded immediate feedback from them" (p. 42). In Zhao and McDougall's study, lack of immediate responses "made [students] feel less direct connection with the instructor and inhibited clarifying uncertainties quickly" (p. 68).

Synchronous interaction in online courses, whether in the form of voice or text, might provide the immediacy that would otherwise be lacking with asynchronous interaction. In the present study, one student's use of email in real time with other students reflected a desire for immediacy. Similarly, in Basharina's (2007) research with students from different countries learning English through an online project, students described asynchronous communication through a bulletin board as "too 'slow'" (p. 94) compared to what it would have been if they had used text-based synchronous chat.

However, some studies (e.g., Shin, 2006; Tu, 2001; Wang, 2004; Wang & Reeves, 2007) have also identified a number of constraints related to use of synchronous interaction. Tu referred to constraints with use of text-based chat in particular in his study of online international students, noting that constraints were the same for these students as in face-to-face classrooms. For example, students were confused with topic changes and had difficulty understanding discussions at a rapid pace. Having to type messages at a quick pace was also identified as a constraint. Students felt that they were

ignored by other students, which could have occurred when their messages were not written clearly. Yet, the students had a positive view of synchronous communication and considered it more personal than face-to-face communication. With respect to use of text-based chat, Shin's study of international students and visiting scholars and their spouses reported on difficulties with turn-taking and multi-linear topics.

In a study of Chinese students' online learning, Wang (2006) found that an online chat room "is a fast and efficient tool for class communication, but it may marginalize student[s] who are non-native English users, and those who are not good typists" (p. 203). Wang's (2004; see also Wang & Reeves, 2007) study of Asian international students taking online synchronous courses in a voice- and text-based environment revealed students' difficulties multitasking, in the sense of following lectures while trying to use text messaging at the same time. Students were also afraid of making grammatical mistakes and found it difficult to make friends because of the lack of non-verbal communication. Some discussion participants could engage in potentially distractive behaviours while in synchronous sessions, such as answering emails or phone calls (Wang & Reeves, 2007). Studies of international students learning online have identified time-zone differences and scheduling problems as other constraints of synchronous communication (e.g., Liu et al., 2010; Zhang & Kenny, 2010).

If synchronous interaction is introduced as part of the norms in online courses in which international students participate, some considerations may be needed. Tu (2001) recommended that synchronous discussions should be conducted "in a manner that prevents students who possess better typing, language and communication skills, from

dominating the conversations" (p. 56). In Tu's study, international students reported feeling relieved when they realized that they were not expected to produce correct grammar or full sentences in synchronous discussions in their courses. Other recommendations for professors conducting synchronous sessions in which international students participate include summarizing course discussions at the end of each session (Wang, 2004). In terms of using tools for asynchronous or synchronous communication, Wang (2006) recommended having both types of communication available in a course and giving students some choice as to which tools to use. Liu et al. (2010) proposed combining synchronous and asynchronous discussions in online courses with international students "to balance the communication weaknesses of each type" (p. 183).

Expansion of the tools.

A greater variety of media. One way of adding greater variety of media would be by including tools for synchronous interaction, as highlighted in relation to the previous transformation. Besides adding synchronous text- or voice-based interaction, students also referred to adding asynchronous interaction which was not text-based, such as through videotaped lectures and voice recordings. Integrating visual and auditory formats into course delivery could provide international students who are EAL speakers with opportunities to practise listening English skills, as in face-to-face courses, and to better understand course content.

Some studies of international students have referred to students' preference for having a variety of media in online courses (e.g., Liu et al., 2010; Park, 2006; Thompson

& Ku, 2005). Students in Park's study referred to adding a greater variety of media to their courses, which they opposed to relying primarily on text.

Expansion of the outcome.

Appreciation for and satisfaction with online learning. An outcome of resolving the tension between the object of synchronous interaction and the norm of asynchronous, text-based interaction could be international students' appreciation for and satisfaction with online learning. In relation to adding a greater variety of media to online courses, rather than relying upon using mostly text-based interaction, Liu et al. (2010) commented on international students' preference for multimodal learning: "The students… appreciated those professors who made efforts in providing audio and video aids, which… helped [them] understand the course content" (p. 185).

With regard to the affordances of text-based, asynchronous interaction for international students, studies have highlighted that these students can feel more comfortable and find it easier communicating in writing online than through listening and speaking in face-to-face classrooms (Ku & Lohr, 2003; Thompson & Ku, 2005). Zhao and McDougall (2008) found that Chinese international students in their study reported participating more in online courses, as they did not feel inhibited when writing. However, some studies (e.g., Park, 2006) have highlighted that, when studying in courses delivered fully online, international students might benefit from some face-to-face interaction. Park (2006) and Thompson and Ku found in their studies that international

students might prefer and benefit from learning in settings that combine online and face-to-face components.

Engagement. Student engagement could be an outcome of combining synchronous and asynchronous interaction and adding a greater variety of media, but also of including some face-to-face interaction. None of the seven international students in Thompson and Ku's (2005) study "enjoyed a class that was completely online" (p. 43). Suggestions made by students in Park's (2006) study of Asian international students in online courses included combining online and face-to-face learning. Ku and Lohr's (2003) study of international students' first experiences in online courses suggested encouraging, whenever possible, face-to-face interactions or meetings between students and professors as well as among students working in groups.

Tension Two.

Expansion of the object.

Preference for independent learning. Chen et al. (2008) noted that "the perceived absence of the teacher" (p. 318) was at the source of most of the challenges faced by international students adapting to online learning. From the students' perspective, the time and place flexibility of online learning "gave rise to the teachers forgoing their control because they did not coordinate classroom activities or manage discussions, as they would have in face-to-face contexts" (p. 318). In a study of Asian international students, Park (2006) observed that students experienced difficulties directing their

learning, particularly in relation to the need to "motivat[e] themselves without teachers pushing them to study…, [being] accustomed to strong direction from teachers" (p. 96).

Because of asynchronous interaction, students in the present study had the opportunity to support their learning through any-time access to online resources by means of independent online searching, outside of the learning management system. Accessing online resources could be a way of expanding on the resources and content-related information available within online courses. Accessing online content asynchronously provided an opportunity to look up resources in the students' own time, for example to help understand unfamiliar cultural references. In relation to Internet resources, Newberry et al. (2007) explained that international students learning online may rely on using the Internet on their own, for example to look up definitions of terms, but they noted that providing definitions within their online courses could assist these students.

Selwyn's (2011) study illustrated ways in which international students in online courses may use online resources. Selwyn found that international students completing their programs at a distance relied on the Internet to supplement resources provided for their courses, which, in the case of the program he investigated, were mostly in print form. Some international students used the Internet to "move beyond… initial readings—deepening and extending their engagement through further learner-driven online research" (p. 90). Conducting online searches could also be a strategy to compensate for lack of understanding: "Online resources were providing more rudimentary explanations and arguments when the provided… materials proved difficult

to understand" (p. 90). Sometimes students used the Internet to engage partly with the course materials, skipping some elements of the course texts and using instead online synopses from sources such as Wikipedia. One international student explained her reliance on Internet sources by describing her learning experience as "Googling her way through the degree" (p. 90).

Expansion of the norms.

Support and facilitation of independent learning. The international students' online courses could support and facilitate more independent learning for students. The professor, as well as instructional designers, may have to play an important role for these forms of learning to be adopted by international students and sustained. The literature on international students in online courses has indicated that these students may need support to become more independent learners (e.g., Catterick, 2007; Thompson & Ku, 2005).

Thompson and Ku's (2005) study suggested that some international students may have difficulty engaging in independent learning in online courses. In research conducted with Chinese students learning online, they commented that international students may experience difficulties related to "not be[ing] aware that on online courses the role of the professor is as facilitator rather than lecturer" (p. 44). The Chinese students were used to "seeing professors as authoritative figures" (p. 44). In their study of online students in general, not international students specifically, Dabbagh and Kitsantas (2005) found that "the physical absence of the instructor coupled with the

increased responsibility demanded of learners to effectively engage in learning tasks may present difficulties for [them]" (p. 517). These difficulties might be even more prominent for international students, particularly for those taking online courses or programs. International students may encounter difficulties with approaches used in Western educational institutions for online learning, such as those relying on autonomous learning and reflection (Catterick, 2007).

Referring students to resources for study is considered by Anderson, Rourke, Garrison, and Archer (2001) as part of the professor's role as provider of direct instruction. In the online setting in particular, as they noted, directing students to resources is facilitated by the fact that the "number, quality and accessibility of these resources are increasing exponentially" (p. 9).

Independent learning need not include only a focus on individual student learning, but it may be supported and facilitated by means of support networks that facilitate peer-to-peer learning. Wang (2006) found that international students in online courses created their own support networks, which included contact taking place online. The community of international students contacting domestic students or contacting peers of the same linguistic background for support with learning need not be restricted to students within the boundaries of each online course, but could go beyond course boundaries.

International students taking online courses might need to learn skills for self-management and for working independently. Park (2010) explained that international students "need… to recognize the importance of developing self-regulation strategies and metacognitive skills and having more learning ownership and responsibility" (pp. 137-

138). In relation in particular to online courses offered globally, Mason (2007) argued that empirical evidence is needed to understand how to help students be more self-directed.

Enhanced teaching presence. Anderson et al. (2001) identified three roles of the professor: designing and administrating learning; facilitating discourse; and providing direct instruction. With a focus on analysis of online asynchronous discussions in particular, they referred to these three roles as constituting what they labelled "teaching presence" in online learning. Although Anderson et al. referred to these roles in relation to the professor, they could also pertain to others in contexts of online learning, such as instructional designers and support personnel.

Some of the students' comments in the present study could be related to the role of designer and administrator of learning as described by Anderson et al. (2001), such as comments about not knowing what the expectations were in discussions. With respect to facilitating discourse, in Anderson et al.'s description, this role may include professors prompting discussions to draw participants into learning, setting the climate for learning, as well as encouraging, acknowledging, or reinforcing student contributions. In contrast with this array of ways in which professors may facilitate discourse, as students commented, in some cases their online professors did not answer questions or provide sufficient information or guidance as to where information was available. As Chen et al. (2008) noted, international students may view online courses as constraining, because of lack of interaction with professors, as well as with students. The students also

emphasised particularly the importance of receiving feedback from the professor. Providing feedback relates to the role of direct instruction in Anderson et al.'s description of online professor roles.

International students might benefit from having both some teaching presence in online courses and opportunities to engage in independent learning. In terms of the norms in online courses in which international students participate, designing and teaching these courses so that teaching presence is enhanced might include creating protocols for providing extensive and prompt feedback. Discussions could be designed so that, at least in some of parts of them, professors contribute to their content and actively build them together with students, rather than all discussions being initiated or created by students more independently. Professors might also encourage students to contact them in relation to any course matters and even take the initiative to contact students, for example when some individuals are not active in the course.

Expansion of the tools.

First-language online resources. The opportunity to have direct access to resources in the online environment may open up the possibility for international students to use their first language to support their learning independently, which could help them when language skills are insufficient. The resources might include bilingual online dictionaries, technical dictionaries for specific areas of study, and online translators. Other first-language or English-language supports, such as through writing centers, may also benefit international students in online courses.

With respect to use of students' first languages in online courses, Goodfellow et al. (2001) explained that "an element of multi-lingual communication" (p. 80) could be part of programs in which international students participate. In online courses, materials can be made available in multiple languages, possibly more easily than in face-to-face courses (Hartley, Nodenot, Omberton, & Sadkie, 2000). However, as Goodfellow et al. noted, it might be difficult to envision how a multilingual component could be integrated into online courses, as this might demand preparing "parallel versions of some materials and activities in different languages" (p. 80).

Expansion of the division of labour.

Enhanced language-related services and supports. International students who are not as proficient in writing as in other English language skills may have difficulty expressing themselves in writing. Zhao and McDougall (2008) explained that international students studying online might find that they need higher levels of English writing proficiency than in on-campus courses. Strong English writing skills correlate well with international students' academic achievement (Andrade, 2006). Bayliss and Raymond (2004) observed that, even when international students meet the English language admission requirements in their institutions, they might not have the language skills needed to succeed academically, since the language tests that are used for admission might not be adequate measures of language proficiency.

Text-based, asynchronous interaction provides students with opportunities for more preparation time to think about and craft written comments (e.g., Campbell, 2007;

Tiene, 2000), but it may require students to spend more time writing and making revisions (e.g., Campbell, 2007). For international students, in particular those who experience English language difficulties, making language errors when writing online can be a concern (Park, 2006; Thompson & Ku, 2005). This concern may explain why some studies have reported on international students' perceptions that learning online can be time-consuming, particularly in the case of EAL speakers, whether at the undergraduate (e.g., Park, 2006; Zhao & McDougall, 2008) or graduate level (e.g., Liu et al., 2010).

Chinese speakers in Liu et al.'s (2010) study reported tripling their time reading course materials in English when learning online, compared to the time it would have taken them to read them in their first language. Zhang and Kenny (2010) referred to English language proficiency as "by far the most restricting condition" (p. 27) for speakers of EAL in their study of international students in online courses. The students required more time to process course readings and discussion messages and to write postings than their English-speaking peers. They also preferred to read other students' messages over posting initial messages to start discussions.

Tu (2001) described as "tedious" the process of Chinese students writing messages to post online: "Students typed, read, referred to the English-Chinese dictionary, erased and retyped although the discussion messages were supposed to be in a casual written format" (p. 54). In the context of Tu's study, the reasons for this laborious process included students' unfamiliarity with communication through discussion messages in an academic context, which they initially interpreted needed to be very formal. In Goodfellow et al.'s (2001) study, producing "timely and intelligent" (p. 77)

comments using English in online discussions was difficult for EAL speakers enrolled in an online global program.

In terms of recommendations for writing support for international students in online courses, Amant (2005) recommended that online professors include information about the writing support services available for non-native speakers of English. Amant suggested also that professors actively encourage individual students experiencing writing difficulties to use those services.

Expansion of the outcome.

Independent learners. In online courses in which international students participate, combining some teaching presence together with the promotion of independent learning might better support these students' learning. In a study of Chinese students' online learning, Wang (2006) noted that students believed that online courses required more self-discipline than on-campus courses. One of the main strategies that the study's participants had to learn "from and for online learning" (p. 166) was how to be self-managed.

High achievement. In Wang's (2006) study, international students developed strategies to manage their time, such as creating their own learning schedules and completing assignments in advance. An outcome of learning in online courses for international students might be higher achievement as a result of students engaging in forms of independent learning such as those highlighted in Wang's study. Rather than

students finding on their own how to develop independent approaches to learning, however, high achievement might result from supporting students through enhanced teaching presence, with scaffolds to help them progressively become more independent. This process could include promoting ways of learning independently that are particularly suitable for international students, such as through use of first-language online resources.

In addition, for international students, having English language-related supports and services might result in high achievement. Hewett (2002) commented that, for university students who are speakers of EAL such as international students, online writing support services "can provide an alternative working space that offers them increased access for language practice and learning" (Inclusive Learning Support section, para. 3). When writing support is provided online, in particular through text-based communication, there can be language benefits for these students, as they are "using text to talk" (Inclusive Learning Support section, para. 3).

Tension Three.

Expansion of the norms.

Cultural inclusivity. The literature on international students in online courses has identified students' perceptions of a lack of global awareness in their courses, as reflected, for example, in course resources, assignments, and discussion topics (e.g., Liu et al., 2010; Park, 2006; Walker-Fernandez, 1999). In a study of international students from various countries taking online programs from universities in the United States,

Walker-Fernandez noted that bibliographical resources in the students' courses related to the United States. Park found that Asian students learning online were frustrated with "unfamiliar discussion topics" (p. 72). Liu et al. commented on a "lack of multicultural content" (p. 177) and "lack of global cases" (p. 182) in an online Master of Business Administration program that they investigated in a study with both domestic and international students.

Al-Harthi (2005) posited that not considering cultural implications in online courses delivered to students from different cultures could result in lack of shared meanings. In Zhao and McDougall's (2008) study of Chinese students taking online courses from a Canadian university, discussions on topics or events involving Canadian references made students "feel detached from their learning community" (p. 72). Zhang and Kenny's (2010) findings revealed that the levels of participation of international students in online courses might be affected if online courses do not reflect an international dimension: "The design and delivery of the online course were focused on what was familiar for local students, and students with strong English language proficiencies and Western cultural backgrounds tended to dominate the discussion forums" (p. 29).

Difficulties for international students who are EAL speakers with idioms and slang have been reported in the literature on international students in general, not specifically on these students in online courses (e.g., Robertson et al., 2000; Ye, 2005). In research conducted with international students learning online, Zhang and Kenny

(2010) found that the students in their study, who were speakers of EAL, had difficulty understanding others in discussions because of this issue.

Bayliss and Raymond (2004) conducted research with Business graduate students in a university in the United States and found that lack of knowledge of cultural references resulted in reading difficulties for international students which, in turn, related to their academic success. In their study, academic scores were more determined by reading scores for international students than for students whose learning experiences had been North American-based.

In a study of American and of non-American students learning online, Biesenbach-Lucas (2003) found that the latter, who were mostly Asian students, avoided expressing disagreement with others. They interpreted that these students may not have known how to express disagreement appropriately in English or thought it was culturally inappropriate. Brine and Franken's (2006) study of written group assignments using asynchronous communication identified the "internal conflict" of the international Chinese students in their study in relation to the requirement to respond to the work of others online. The authors interpreted that these students were influenced by the Chinese cultural value of maintaining group harmony. This finding may no longer be true today or for all international Chinese students. It is a reminder, nonetheless, that professors and instructional designers should be aware of potential cultural differences.

In her research on Arab Gulf State students learning online, Al-Harthi (2005) noted that cultural differences in interaction resulted in the six international students in her study participating less than their domestic counterparts. Al-Harthi posited that some

of those differences could be between individualistic societies, "where the focus is more on learning process" versus collective societies, "where the focus in more on the product" (Less Participation section, para. 1). Mason (2007) argued that cultural differences might not be relevant only in global courses or online courses, but "they are much more evident and more difficult to address without the benefit of face-to-face interaction" (p. 586).

Amant (2005) proposed including glossaries with idioms when teaching online courses to an international student body, as well as creating a weekly glossary with key terms and abbreviations related to the language used in the course (e.g., American English) and to the specific topics being addressed in course discussions. Thompson and Ku's (2005) and Park's (2006) studies recommended providing additional information or references for international students when cultural references are used.

Instructional designers, as well as professors, can be assisted by existing recommendations (e.g., Amant, 2007; Gunawardena & LaPointe, 2007) for designing online learning that reflects cultural inclusivity. They might pay attention to instances where they detect a lack of a global perspective in online courses. For example, the design and delivery of online courses could take into account having an international perspective, in terms of the topics selected for the courses.

Studies of international students both in online (e.g., Liu et al., 2010; Park, 2006; Thompson & Ku, 2005; Walker-Fernandez, 1999) and on-campus courses (e.g., Morita, 2004; Tatar, 2005) have made recommendations to make courses reflect a more globally-aware perspective. Some studies of international students have suggested including topics that call for international students' experiences, both in written assignments and in-

class discussions (e.g., Morita, 2004; Tatar, 2005). Walker-Fernandez noted that course resources do not need to be limited to those that reflect the perspective of the local culture (e.g., American). She suggested "providing required or suggested readings and resources in students' native languages, or from their nation or cultural group" (p. 195). In online courses relying on cases, Liu et al. proposed using cases that are culturally inclusive.

One of Gunawardena and LaPointe's (2007) recommendations for online learning that reflects cultural inclusivity included having a variety of presentation methods using, for example, videos, audio, CDs, and Webcasts. Studies of international students learning online have also recommended cross-cultural training for teaching staff (e.g., Liu et al., 2010; Park, 2006).

Social interaction. Providing opportunities in online courses for students to interact socially might support international students in particular, as they may experience feelings of isolation when learning online. International graduate students in Erichsen and Bolliger's (2010) study reported satisfaction with the content of the online parts of their programs, but experienced a sense of isolation and "felt that the learning community aspect of online courses was missing" (p. 320). The international students in online courses who participated in Thompson and Ku's (2005) study perceived "an absence of a community of people" (p. 42). One student compared participating in course discussions with "talking to strangers" (p. 42).

In Hannon and D'Netto's (2007) survey of culturally and linguistically diverse students in online courses, more than half of the students did "not find it easy to get to

know fellow students" and about half of them "perceived a lack of friendliness of online communication" (p. 425). In a study of Chinese international students learning online, Tu (2001) reported on students' perceptions that "text-based messages could be cold and unfriendly" (p. 55).

With respect to international students learning online at the graduate level, Chen et al. (2008) found that students may wish to establish personal connections and the tools in online courses actually offer them this possibility, but "in reality, especially with busy postgraduate students, this is likely to become an empty promise" (p. 320). In a study conducted with students enrolled at a United Kingdom university who were completing their programs at a distance, Selwyn (2011) found that students referred to feeling isolated from others; however, most of them did not make use of the online tools in their courses designed to increase student-student and student-tutor interaction. They did not use them "due to a lack of time, with learners prioritising other activities in their home and work lives" (p. 164).

Zhang and Kenny (2010) found that international students in online courses in the context of their research did not think of social interaction as essential: "Even though some course members thought a space for socializing was somewhat important, they did not perceive it as critical for their learning" (p. 28). In a study of online students, not international students specifically, Anderson and Kuskis (2007) found that some may not engage in social interaction as they purposefully choose learning formats at a distance for non-interactive, independent study. In his study of international students, Selwyn (2011) observed that students learning at a distance may prioritise benefitting from time

flexibility in their learning schedules, particularly those at the graduate level with work or other commitments which also require their time. Instructional design that aims to promote social interaction in online courses, therefore, might need to take into account that, in a course, some international students might have social interaction as an object, whereas there might be domestic students in the same course who do not have it as an object, for various reasons.

Expansion of the community.

Networks of international and domestic students for social and cultural interaction. Professors and instructional designers might focus on enhancing social presence in ways that promote interaction between domestic and international students. Social presence has been defined as "the ability of participants to identify with the community (e.g., course of study), communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities" (Garrison, 2009). In a study of international students, Tu (2001) defined a medium with high social presence as one that "should be able to convey social context and provide two-way communication and interaction" (p. 49). Students' perceptions of social presence in online learning contexts are important because they have been related to student satisfaction (Gunawardena & Zittle, 1997; Hostetter & Busch, 2006; Richardson & Swan, 2003; Swan & Shih, 2005).

Even if international students may wish to establish friendships with domestic students (Trice, 2004), they might perceive that, in online courses, they have few

opportunities to interact informally with them. In relation to findings of their study, Thompson and Ku (2005) commented: "Students missed having opportunities to interact and/or having informal conversations with American students that typically happen in the traditional classroom… before, during and after classes" (p. 44).

International students might wish to engage in cross-cultural exchange, for example by learning about domestic students' culture and by promoting their own cultures. Thompson and Ku (2005) explained that learning about another culture can be one of the reasons why international students decide to study in another country. However, international students in their study, which was conducted at a university in the United States, contrasted online and on-campus classes in terms of opportunities to learn about the local culture. They identified "lack of cultural exchange" (p. 33) as one of their main concerns and thought that, in online courses, they were unable to learn about American culture.

Students' cultural learning may benefit from the online professor purposefully promoting cross-cultural exchange among international and domestic students. Thomson and Khu (2005) indicated that one strategy in online courses could be to assign international and domestic students to work together in the same group "to promote diversity and cultural understanding" (p. 45).

Ye (2006a) described how online social groups established in some universities provide general supports for international students: "Members who share similar experiences of living in a foreign country (e.g., adapting to the new teaching system; dealing with ethnic stereotypes)… offer or receive understanding and… help each other"

(p. 6). For international students in online courses in particular, opportunities for online interaction with both international and domestic students might support them socially and culturally.

Expansion of the outcome.

Friendships, social connections. Friendships and social connections could be an outcome of deliberately designing and teaching online courses to promote students' social interaction, as this interaction might not happen spontaneously among online students. Courses might include collaborative activities that pair international with local students. Discussions in a course could include a water cooler folder set up to promote social interaction among students throughout the course. Tu (2001) found that expression of emotions and feelings were important for the Chinese students in the online courses he studied. To enhance social interaction in text-based environments, emoticons may be used to enable expression of feelings.

Cultural inclusion. Cultural inclusion might be an outcome for international students as a result of designing and teaching online courses to reflect awareness of cultural issues. Reflecting cultural awareness in these courses might be easily achieved, for example, by introducing some changes into their content and evaluation components. Thompson and Ku (2005) provided an illustration, when they proposed customising assignments to introduce an international perspective into online courses, by providing students with the opportunity to work on topics related to their countries of origin.

Envisaging an Expanded Form of Learning. As Engeström (2001) explained, in important transformations of practices, "we must learn new forms of activity which are not yet there" and "are literally learned as they are being created" (p. 138). The study's AT analysis of the international students' learning in online courses resulted in the identification of opportunities for transformations in the activity of learning which "were not yet there." The opportunities highlighted how students' learning could acknowledge or resolve the contradictions or tensions that were identified. They delineated how learning in which international students participate could be designed, delivered, and experienced to envisage a wider range of possibilities than previously, culturally and historically.

The activity system in Figure 8 synthesizes the previous section of this chapter related to expansive learning. The activity system in the figure depicts, using square bullets with text in bold, the opportunities for expansive learning, in the sense of what could be added or changed with respect to learning in online courses. The round bullets refer to what learning was like, as reflected in the study's themes.

In the expanded form of learning, in addition to time and place flexibility, which was already an object for online courses, students could have both asynchronous and synchronous interaction as an object. They could also have independent learning as an object. Besides those already present in the activity system, tools could include: synchronous voice/text-based chat; asynchronous video/voice recordings; and first-language online resources. The norms could be expanded to include: online asynchronous and synchronous interaction as well as face-to-face interaction; enhanced

teaching presence; support and facilitation of independent learning; and promotion of cultural inclusivity and social interaction.

Teaching presence could be part of the norms, for example in the sense of the establishment of protocols for provision of feedback from professors and inclusion of instructional design elements such as calendars. It could also be part of the division of labour, in terms of the roles of those involved in the activity, such as in relation to the provision of language-related support to students as being the role of the professor, of writing center staff, or of other personnel. In addition to independent learning, which was already part of the division of labour, this component could include enhanced teaching presence. The division of labour could also include enhanced language-related services and supports.

The community of students could include both domestic and international students, as well as, among international students, those sharing the same linguistic background. In the expanded form of learning, anticipated outcomes, in the sense of how students would be different after learning in online courses, could be: an appreciation for and satisfaction with online learning; engagement; independent learners; high achievement; friendships, social connections; and cultural inclusion.

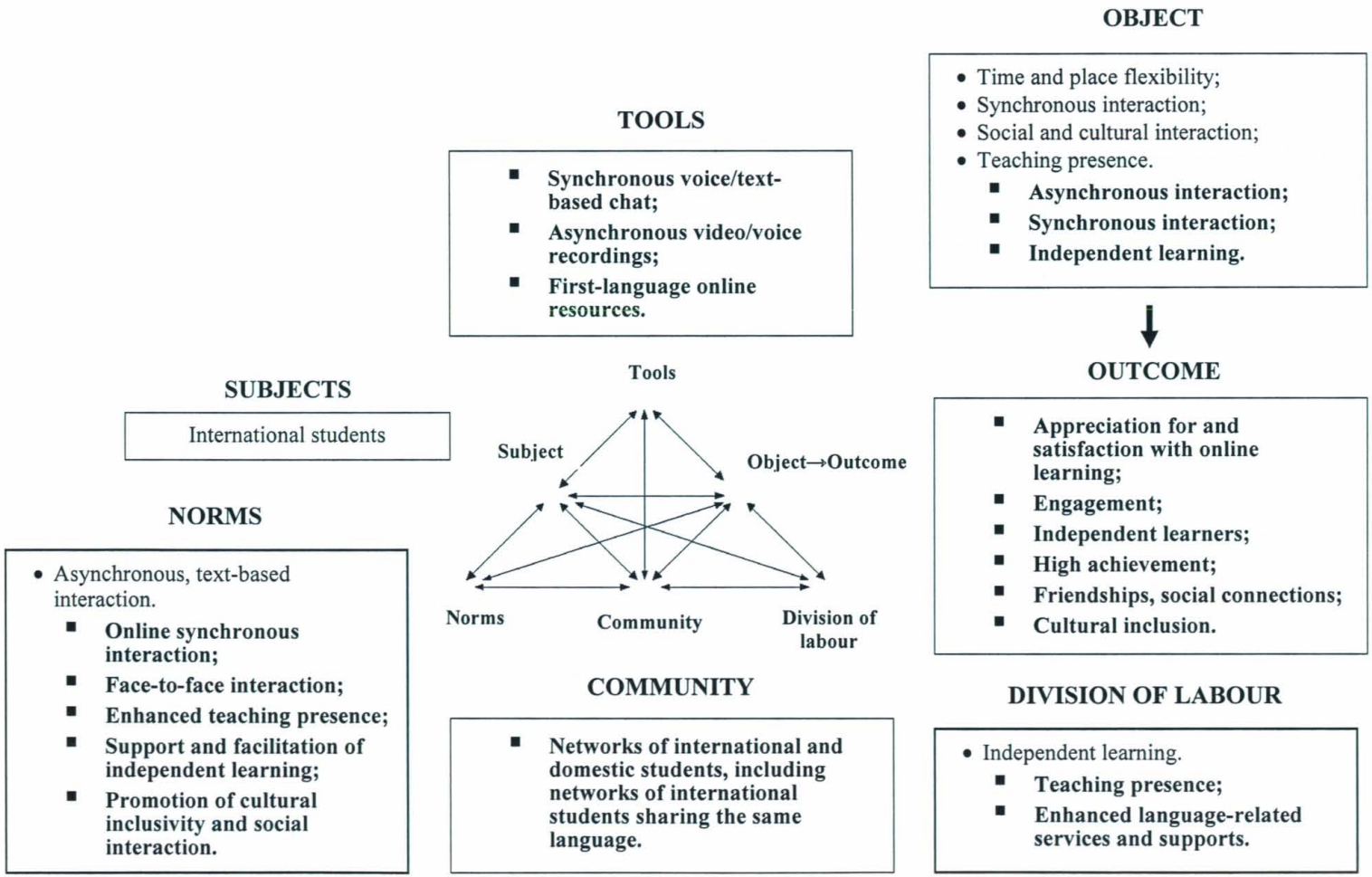


Figure 8. Opportunities for expansive learning in the activity system of postsecondary international students in online courses

Summary of the Chapter

This chapter used AT to analyse the study's themes. It was organised according to AT's five principles. Use of the activity system as a unit of analysis helped capture the contextual and systemic complexity of the international students in online courses. For example, the study's themes could be interpreted as interrelated when considered in relation to students' activity systems. Multivoicedness was discussed in relation to students' different articulation of their objects for learning in online courses. It was also discussed in relation to how international and domestic students' objects might differ. Historicity was discussed in relation to changes that students underwent when moving into online courses characterised by temporal and spatial flexibility.

Analysis resulted in the identification of three contradictions. They were all rooted, culturally and historically, in learning in face-to-face settings. As Engeström (1996) noted, activity systems contain "buds or shoots of [their] possible future" (p. 68). Expansive learning, the fifth principle in AT, refers to the potential for expansive transformations in activity systems through the resolution of contradictions (Engeström, 2001). By expansive is meant an expansion in or broadening to encompass a wider range of possibilities for the activity of learning. Each of the three tensions that were identified became a starting point for consideration of transformations in the activity of learning, which would be the result of resolving and acknowledging the tensions.

One contradiction or tension was identified between the object of synchronous interaction, in the sense of interaction that recreates real-time learning in face-to-face settings, and the norm of asynchronous, text-based interaction. To resolve this tension,

the object could expand so that students have as an object online asynchronous interaction, in addition to synchronous interaction. The norms in online courses could include face-to-face and online synchronous interaction, not just online asynchronous interaction. Tools could include a greater variety of media. Outcomes could be an appreciation for and satisfaction with online learning as well as student engagement.

A second contradiction or tension related to the object of teaching presence and the division of labour favouring independent learning as well as the norm of asynchronous, text-based interaction. In order to resolve this tension, the object could expand so that students have independent learning as an object. The norms could include the support and facilitation of independent learning as well as enhanced teaching presence. The tools could include first-language online resources. The division of labour could include enhanced language-related services and supports. Outcomes could be independent learners and high achievement.

A third contradiction or tension was identified between the object of social and cultural interaction and the norm of asynchronous, text-based interaction. To resolve this tension, as regards norms, courses could promote cultural inclusivity and students' social interaction through, for example, a water cooler folder set up for social interaction in their online courses. In relation to the division of labour, networks of international and domestic students could be promoted for social and cultural interaction. Outcomes could be friendships and social connections as well as cultural inclusion. The purpose of the next chapter is to present conclusions and limitations.

Chapter Eight

Conclusions and Limitations

Conclusions

The purpose of this study was to portray the activity systems of postsecondary international students enrolled in online courses in order to identify opportunities for positive transformations in the activity of learning. The specific objectives of the study were to: 1. Identify and portray the activity systems of five postsecondary international students enrolled in online courses; 2. Cross-analyse the portraits to identify themes; 3. Analyse the themes using AT's five principles, with a focus on contradictions and the identification of opportunities for positive transformations in the activity of learning. Chapter Five focused on the first objective. Chapter Six addressed the second objective and Chapter Seven addressed the third objective.

The study focused on five individual international students who had completed online courses. The students were speakers of EAL enrolled at Memorial University of Newfoundland, Canada. AT provided a framework to guide data collection, data analysis, as well as interpretation and presentation of findings. Transcripts of interviews with students were examined through the lens of AT and individual portraits were created of the students' activity systems in online courses. The portraits were cross-analysed for themes. The themes were then analysed in relation to AT's five principles, with an emphasis on contradictions or tensions and the identification of opportunities for positive transformations in the activity of learning.

Six themes emerged from analysis of the portraits of the international students' activity systems. The theme of *Asynchronous, Text-Based Interaction* referred to both the affordances and constraints associated with the norm of asynchronous, text-based interaction in the students' online courses. The theme of *Synchronous Interaction* related to students' object of interaction that replicated real-time learning in face-to-face settings, such as through use of synchronous voice and asynchronous video in online courses. *Time and Place Flexibility* captured the object of flexibility in learning which constituted students' motivation for enrolling in online courses. The theme labelled *Social and Cultural Interaction* captured students' object of having social interaction in their courses as well as cross-cultural exchange. The label of *Teaching Presence* was used to capture students' object related to: the articulation and clarification of expectations; course organisation; design of discussions; provision of support in relation to writing; availability of professors to answer questions and provide feedback; and selection of content. The students related most of these elements of course design, delivery, and provision of support with the role of the professor in establishing a defined teaching presence; however, they could also relate to the role of instructional designers and support personnel. The theme of *Independent Learning* related to the division of labour in the students' courses, with an emphasis on peer-to-peer learning and on direct access to online resources and tools for independent learning.

The themes were analysed in relation to AT's five principles: the activity system as the main unit of analysis; multivoicedness; historicity; contradictions; and expansive learning. Use of the activity system as a unit of analysis helped capture the contextual

and systemic complexity of the international students in online courses. For example, the themes that were identified could be interpreted as interrelated when considered in relation to students' activity systems. Multivoicedness was discussed in relation to the students' different articulations of their objects for learning in online courses and in relation to how international and domestic students' objects might differ. Historicity was discussed in relation to changes that students underwent when moving into online courses characterised by temporal and spatial flexibility.

The study identified three contradictions or tensions. They were all rooted, culturally and historically, in learning in face-to-face settings. One contradiction was identified between the object of synchronous interaction and the norm of asynchronous, text-based interaction. Synchronous interaction was an object for the students, in the sense of interaction that replicated real-time learning in face-to-face settings, where physical co-presence and visual cues are present. Synchronous interaction was an object for the students also in the sense of interaction that replicated the same-time, different-place communication that occurs through forms of real-time communication such as texting and chat. The students' online courses could have been designed differently to support these types of interaction; for example, they could have included tools other than those supporting asynchronous, text-based interaction. However, the courses relied on asynchronous, text-based interaction as a norm.

A second contradiction or tension related to the object of teaching presence and the division of labour favouring independent learning as well as the norm of asynchronous, text-based interaction. The division of labour in the students' online

courses emphasised independent forms of learning. For example, students could, in some cases, feel that they had to resort to asking questions to other students in their online courses. The discussions provided interaction and support among students, more than between the professors and students. There were also ways in which asynchronous, text-based interaction as a norm in the online courses did not support a defined teaching presence. For example, receiving text-based replies and feedback in a mode that was asynchronous could result in a feeling of delayed responses from the professor, in contrast with immediacy in interaction in face-to-face courses.

A third contradiction or tension was identified between the object of social and cultural interaction and the norm of asynchronous, text-based interaction. The norm of asynchronous, text-based interaction did not support the object of social and cultural interaction. This interaction might occur spontaneously and informally in face-to-face learning settings, where students are physically co-present, in contrast with online courses. Social and cultural interaction could be hindered in online courses because, for example, other online students might not know that a fellow student was an international student. Courses were not designed and delivered to promote cultural interaction, and could lack global topics and include cultural references that could be unfamiliar for international students.

As Engeström (1996) noted, activity systems contain "buds or shoots of [their] possible future" (p. 68). Expansive learning, the fifth principle in AT, refers to the potential for expansive transformations in activity systems through the resolution of contradictions (Engeström, 2001). By expansive is meant an expansion in or broadening

to encompass a wider range of possibilities for the activity of learning. Engeström noted that expansive learning activity produces "culturally new patterns of activity" (p. 139). He further explained: "In important transformations of our personal lives and organizational practices, we must learn new forms of activity which are not yet there. They are literally learned as they are being created" (p. 138). In the context of the present study, a new horizon of possibilities represented moving towards forms of learning involving new patterns of activity, culturally and historically. These forms of learning would be potentially more suited for international students.

Each of the three tensions or contradictions that were identified became a starting point for consideration of a broader range of possibilities. The possibilities could result in transformations in the activity of learning, as a result of resolving and acknowledging the tensions. The opportunities for transformations that were identified delineated how learning in which international students participate could be designed, delivered, and experienced to envisage a wider range of possibilities than previously, culturally and historically.

The contradiction or tension between the object of synchronous interaction, in the sense of interaction that recreates real-time face-to-face learning, and the norm of asynchronous, text-based interaction may be resolved by expanding the object. Students could have as an object online asynchronous interaction, in addition to synchronous interaction. In terms of expansion of the norms, the norms in online courses could include face-to-face and online synchronous interaction, not just online asynchronous

interaction. Tools could include a greater variety of media. Outcomes could be an appreciation for and satisfaction with online learning as well as student engagement.

A second contradiction or tension was identified in relation to the object of teaching presence and the division of labour favouring independent learning as well as the norm of asynchronous, text-based interaction. To resolve this tension, students' object could include a preference for independent learning. The second tension could also be resolved by expanding the norms, which could include the support and facilitation of independent learning as well as enhanced teaching presence. The tools could include first-language online resources. The division of labour could include enhanced language-related services and supports. Outcomes could be independent learners and high achievement.

A third contradiction or tension was identified between the object of social and cultural interaction and the norm of asynchronous, text-based interaction. This contradiction may be resolved by expanding the norms, with online courses promoting cultural inclusivity and students' social interaction. In relation to the division of labour, networks of international and domestic students could be promoted for social and cultural interaction. Outcomes could be friendships and social connections as well as cultural inclusion.

Limitations

The study was limited to five international students in one Canadian university. The focus on five individual students privileged depth rather than breadth. By means of

the individual portraits of students, the study aimed to provide in-depth description of international students' learning in online courses. The small number of participants prevents from generalising findings. However, as Lincoln and Guba (1985) argued with respect to qualitative studies, qualitative research can aim to provide enough description so that the reader may draw conclusions about what findings can be transferred to another context.

The focus on five students meant that there were a limited number of characteristics that could be included, in terms of, for example, students' linguistic and cultural-historical backgrounds. Some of the students had little experience with online courses. If all had been more experienced online learners, the objects highlighted in the study might have been different. The model of online learning in which the students' courses were based relied on asynchronous, text-based interaction. Insights gained into international students' learning might be different in courses with more use of synchronous interaction such as through voice and video, instead of mainly text.

It was not in the scope of the study to systematically compare subgroups of international students. These subgroups could be identified according to: geographical and national origin; undergraduate or graduate level of studies; academic field or program; on-campus or off-campus student status; prior level of experience with online courses; or level of expertise using technology in general. Focusing on subgroups of international students in online courses, such as graduate students or undergraduate students, could help gain further insights into international students' learning. For example, would time flexibility, as an object, be as important for graduate as for

undergraduate international students? Insights might also have been gained into the extent to which each group might benefit from combining synchronous and asynchronous communication. In addition, assuming that undergraduate international students may be less independent students, is teaching presence as an object more important for them than for their graduate counterparts?

The study was not designed to compare on-campus and online courses. However, some comparisons between the two might be relevant, such as with respect to students' perception of interaction with the professor in both types of courses. In addition, it might be possible to gain insights into whether objects associated with face-to-face learning, such as synchronous communication, could be integrated more into online courses. It might also be possible to ascertain whether synchronous interaction, such as through voice and video, could have benefits for international students who want opportunities for practising English listening and speaking skills, as in face-to-face courses. Would synchronous interaction in online courses also benefit students who wish to socialise and get to know other students as they do in face-to-face courses?

The portraits of the international students might have reflected aspects of learning in online courses that could also be shared by domestic students. These aspects could include, for example, students' decision to take online courses based on scheduling issues, rather than on preference for learning in online over face-to-face courses. Although some of the affordances of asynchronous interaction in online courses might be beneficial particularly for EAL speakers, such as having time for writing in the English language, some could also benefit online students in general. Since the study did not aim

to compare international and domestics students, it is not possible to ascertain what commonalities and differences could have been found between the online learning of the international students and their domestic counterparts. We do not know, for example, if social interaction is more important for one group than the other in online courses. In addition, what objects for online courses, besides time and place flexibility, do international students and domestic students prioritise, and to what extent?

Another limitation of the study is that data collected related to students exclusively. The perspectives of online professors or support personnel were not included. Investigating the activity system components of norms and division of labour in online courses, in terms of the roles that online professors adopt, for example, might help further understand international students' learning in those courses. Additional insights might have been gained by including technical and writing center support staff or other support personnel working with international students enrolled in online courses.

There were also limitations related to the use of AT. In AT research, intersections can be identified between the system under study and an external activity system or systems (Thorne, 2003). Culturally and historically, face-to-face learning was an activity system that influenced the international students' learning in online courses. In addition, there were glimpses into how the activity system of an individual international student in online courses could be influenced by his or her prior and present computer and Internet use. For example, a student might benefit in daily life from the immediacy afforded by online synchronous interaction through chat, which might no longer be available, in contrast, when learning in online courses that are delivered asynchronously. Engagement

in other activity systems which may be more difficult to identify, such as those related to family and parental involvement, could also influence an international student's learning in online courses. The study focused on analysing the activity system of learning in online courses and it was beyond its scope to analyse other activity systems, such as learning in face-to-face courses. Future AT studies could investigate comparisons between the two activity systems.

One limitation of AT relates to Thorne's (2005) assertion that AT is "still a work in progress" (p. 395). Although AT offers versatility, as it provides "a set of heuristics and tools that can be… situationally adapted" (p. 395), using it might pose a challenge for researchers because it is still being developed. In the 1990s, Kaptelinin (1996) argued that AT was "not yet operationalized enough" (p. 64). The fact that specific procedures and protocols related to use of AT are being developed means, for example, that there might be few models of data collection instruments available guided by AT, such as for developing interview protocols.

Hardman (2008) argued that AT "is not operationalised to study pedagogy" (p. 90) and "has yet to be fully operationalised in a classroom setting" (p. 65). In the context of computer use in Mathematics school classes in particular, Hardman (2007) developed procedures for analysis of observational data relying on AT. In the present study, a protocol for analysis of interview data was developed; if there had been pretested protocols designed in relation to the area being investigated, these could have been used instead. The study's protocol could be used and further developed in other studies.

In spite of its limitations, this thesis contributes to our understanding of international students and online learning. The use of AT in the study, through the individual portraits of students' activity systems, offered holistic insights into each individual's learning in online courses. In addition, AT provided insights into the contradictions that students faced in that learning setting by relating the contradictions to specific components of their activity systems as well as to their previous learning, culturally and historically. The study also adds to the literature on AT, in that it highlighted that data analysis protocols drawing on AT can be developed for AT studies. The AT protocol for this study was used for analysis that resulted in the creation of the individual portraits of students' activity systems. Finally, the study contributes to practice, in that it identified opportunities for expansive learning in online courses with international students. The study's section on expansive learning pointed to how learning in online courses might be transformed to produce improved outcomes and positive experiences for international students.

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Appendix A

Ethics Approval

MEMORIAL
UNIVERSITY
Interdisciplinary Committee on
Ethics in Human Research (ICEHR)

Office of Research
St. John's, NL Canada A1C 557
Tel: 709 737 8368 Fax: 709 737 4612
www.mun.ca

January 19, 2009

ICEHR No. 2008/09-050-ED

Ms. Maria Rodriguez Manzanares
Faculty of Education
Memorial University of Newfoundland

Dear Ms. Rodriguez Manzanares:

Thank you for your submission to the Interdisciplinary Committee on Ethics in Human Research (ICEHR) entitled *"Post-secondary international students and web-based distance learning: an activity theory perspective"*. The ICEHR notes the thoroughness and clarity of your ethics application and appreciates the effort you made in its preparation.

The Committee has reviewed the proposal and we agree that the proposed project is consistent with the guidelines of the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans* (TCPS). Full approval is granted for one year from the date of this letter.

If you intend to make changes during the course of the project which may give rise to ethical concerns, please forward a description of these changes to the ICEHR Co-ordinator, Mrs. Eleanor Butler, at ebutler@mun.ca for the Committee's consideration.

The TCPS requires that you submit an annual status report on your project to ICEHR, should the research carry on beyond January 2010. Also, to comply with the TCPS, please notify us upon completion of your project.

We wish you success with your research.

Yours sincerely,

Lawrence F. Felt, Ph.D.
Chair, Interdisciplinary Committee on
Ethics in Human Research

LF/en

copy: Supervisor - Dr. Elizabeth Murphy, Faculty of Education

Appendix B

Recruitment Flyer

International Students & Web-based Learning

You are invited to be part of a study on

International Students' Web-based Learning

Your participation may provide you with an opportunity to reflect on your experiences in web-based courses and help inform the design and delivery of web-based courses in which international students participate.

Participation entitles you to your name

being included in a draw for 3 iPod Shuffles

(with the names of the other study participants).

Students who complete participation will also receive:

- **A 2GB Memory Stick**
- **Some items with the university logo, such as a winter hat, coffee sleeve, notepads, etc.**

IF YOU WOULD LIKE TO PARTICIPATE, PLEASE EMAIL ME at mariar@mun.ca and I will send you a consent form.

If you have further questions about this study or your possible involvement, you may contact:

- Me: **Maria Rodriguez, (709) 737-3468; mariar@mun.ca**
- My supervisor: **Dr. Elizabeth Murphy, (709) 737-7634; emurphy@mun.ca**

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) at Memorial University. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or 737-8368.

Appendix C

Recruitment Email

Invitation to participate in study of international students

Are you or have you been an international student at Memorial? Are you taking or have you taken at least one distance course?

If you answer yes to both questions, then you are invited to participate in a research study (see attached Poster). Your participation would involve:

1. One audio-recorded individual interview (maximum 1.5 - 2 hours). If you are not in the St. John's area, I would phone you at a mutually agreed time to conduct the interview.

2. Your approval by email of the researcher's written portrait of your distance learning.

For more information or if you may be interested in participating, please email me: mariar@mun.ca. Thank you very much.

María A. Rodríguez
http://mariarodriguez98.googlepages.com/

Appendix D

Email Reply for Students

Hello, (student's name)

Thank you very much for your interest in my study. Please find attached a consent form, for your reference (this is a standard form for participants in research studies). You do NOT need to print it or sign it now, because I would bring copies when we meet for our interview.

If would like to participate, could you please send me a reply email indicating "I have read the consent form and would like to participate in the study"? In your reply, could you also send the information indicated below? Then I would contact you to schedule a day/time to meet for the interview which is convenient for you. If you are not in the St. John's area, that is not a problem, because I would phone you at a time convenient for you to conduct the interview.

AREA OF STUDY (for example, Engineering, Business, etc.):
UNDERGRADUATE / GRADUATE :
APPROXIMATE NUMBER OF ONLINE COURSES COMPLETED:
YOUR MOTHER TONGUE OR TONGUES (for example, Chinese, Arabic, etc.):

Thank you very much. I will be contacting you again shortly. If at any time you have any questions, please contact me: Phone: 737-3468; Education building, room ED4005.

Maria

WEB PAGE: http://mariarodriguez98.googlepages.com

Appendix E

Consent Form

I understand that:

- My participation in this project is limited to:
  - ✓ One audio recorded interview (approximately 1.5-2 hours, maximum);
  - ✓ My approval of the researcher's written portrait of my web-based learning.
- My participation would be voluntary and not linked to my role as a student.
- I may withdraw from the study at any time, without having to give a reason, and doing so will not affect me now or in the future.
- Only the researcher and her supervisor will have access to the study's data, which will be stored and kept for five years, following research ethics guidelines.
- The confidentiality of my participation cannot be guaranteed because of the small number of participants. However, pseudonyms and NOT actual names will be used in reporting.
- By agreeing to participate in this study, I am providing consent to publication of my comments in anonymous format in part or in whole in research reports and papers.
- The researcher, María A. Rodríguez and her doctoral thesis supervisor, Dr. Elizabeth Murphy, will be available during the study to answer any questions I might have.

I have read and understood the description provided, had an opportunity to ask questions and my questions have been answered. I consent to participate in the project, understanding that I may withdraw my consent at any time. A copy of this Consent Form has been given to me for my records.

Participant's Name: _____

Participant's Signature: _____

Date: _____

E-mail: _____

Telephone: _____

If you sign this form, you do not give up your legal rights, and do not release the researcher from her professional responsibilities.

Researcher's Signature: _____ Date: _____

I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participant fully understands what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

Appendix F

Interview Protocol

Questions Related to Personal Background

1. What year are you in your program (1^{st}, 2^{nd}, 3^{rd}, 4^{th})?
2. Before you enrolled in your program at this university, what studies had you completed and where? What was the language of instruction?
3. What courses have you done online/at a distance so far?:
    - At Memorial University or another university?
    - In what area (e.g., Math, Engineering?)
4. What are the main differences between learning here and in your country?
5. How would you describe yourself as a student? How do you learn best?
6. And how would you describe yourself as an online student?
7. How would you describe yourself in terms of personality (talkative, quiet, outgoing…)?

Questions Related to Tools

1. What Internet tools do you use, in general? For what purposes? Which ones do you prefer?
2. Before you registered for online courses here, had you used the Internet much in general?
3. Had you used it much for learning? In what ways?
4. How much of your communication is synchronous (with people meeting at the same time, e.g., to chat) versus asynchronous (not in real time, e.g. email)?
5. Is it easy/hard for you to find the information that you need in your online course? What things make it easier for you to find your way or to find the information online?

6. What tools are available in your online courses (e.g., chat, email, discussion forum…)?
7. Which tools do you use the most and for what purposes?
8. Which tools do you prefer to use and for what purposes?
9. If you could design or pick the type of online learning environment, what would you change in terms of the tools you have available now?
10. What tools would you like to see in your online courses that are not there now?
11. Do you use any tools outside of the online courses to support your learning?
12. How do the tools compare with what you use in a regular on-campus (face-to-face, classroom) courses? Which ones are the same which ones are different? Which ones are better for you and why?
13. What is it like to learn in an online environment where you are not using your first language?
14. When working on your online courses, individually or with other people, do you ever use your first language?
15. How would you rate your level of English proficiency in relation to: reading, writing, listening, speaking?
16. In your online courses, what are you doing most of the time?- does learning involve mostly reading, writing, speaking, listening?
17. In relation to the previous question, would you prefer more of any of reading, writing, speaking, listening? Why?
18. How could the tools better support you learning as a person of non-English-speaking background?
19. What English language supports are provided to you to complete your course? If you do not have these supports, would you like to have them? Which ones?

Questions Related to Community

1. Who are/have been the other people in your online courses? (e.g., online instructors, teaching assistants, guest speakers, students, technical support staff)
2. Do any of the other students speak the same language as you do? In what language do you communicate with them?
3. What have been positive aspects (if any) of being in an online community of students?
4. What have been some of the negative aspects (if any) of being in an online community of students?
5. How is the online community of students different from or similar to the community in your on-campus courses?
6. Do you communicate more/less/about the same with other students/with instructor in an online course versus an on-campus course?
7. Do you have social interactions with the students in your online courses?
8. Do students tell others about themselves and their lives in your online courses? How do you find that?
9. In your online courses, do you do tell other people about yourself and your life?
10. You mentioned at the beginning of the interview that you consider yourself to be (talkative, quiet, outgoing…). Do you think you are the same in your online courses or different?
11. Do you think that in online courses the other people can see your personality as it is, or do they see you differently?
12. If you could change something about the interactions with people in your online courses, what would it be? (compared with on-campus courses)

Questions Related to Norms (Rules)

1. Do you find online courses structured on unstructured? In what ways?
2. How would you describe the teaching style of the instructors in your online courses?

3. Are there guidelines or rules in your online courses about how to interact with the instructor?
4. Are there guidelines or rules in your online courses about how to interact with other students?
5. Are these different from an on-campus course? If so, how?
6. How does the pace of learning in your online courses compare to what you are used to in on-campus courses?
7. How do assignments and evaluation in your online courses compare to what you are used to in your on-campus courses?
8. What are the participation requirements in your online courses? How do they compare with on-campus courses?
9. Do you have any collaborative tasks or activities in your online courses? What are they?
10. Do you ever have to respond to other people's work or give them feedback? What is that like for you?
11. Based on your experience, what cultural aspects of international students' online learning might need to be considered to improve their online learning experience? For example, is there anything that seems to be perceived in a particular way by Canadian students or seems to be no problem for them, but is different for you?
12. If you could change anything about these aspects of your online learning, what would they be?

Questions Related to Division of Labour

1. In your online courses, in what situations are you working on your own and in what situations are you working with others? How does this compare with on-campus courses?
2. What types of support are available and how do you access them? How do these compare to learning supports for your on-campus courses?

3. Have you had other types of support for online courses, either formally or informally (e.g., other students, other people)?
4. How does your interaction with your instructor compare in your online courses with your on-campus courses?
5. How easy is it for you to have your questions answered in an online versus an on-campus course?
6. Have you encountered any problems or issues with administrative aspects (such as registration, etc.)?
7. What changes would you propose to these aspects of online learning?

Questions Related to Object-Outcome

1. Why did you enrol in online courses?
2. Before you started studying online, how did you feel about learning online?
3. What did you hope to get out of online learning?
4. What were your expectations about this form of learning? Did it live up to those expectations? Why?
5. If you have to take another online course, would you?
6. Would you recommend online learning?
7. What are the best aspects about online learning for you, in general? And, compared to on-campus courses, what are the best aspects?
8. What are the worst aspects of online learning for you, in general? And, compared to on-campus courses, what are the worst aspects?
9. Do you prefer on-campus or online courses and why?

Question Related to Changes over Time

1. I would like you to remember the time when you started taking online courses at this university. Are there things that you do differently now in online courses? Has your experience changed? Has it improved?

Last Question

1. Is there anything else we haven't talked about in relation to online learning that you would like to mention?