TOWSON UNIVERSITY
COLLEGE OF GRADUATE STUDIES AND RESEARCH

THE EVOLVING PERCEPTION OF TECHNOLOGY: AN EXPERIENCED

ENGLISH INSTRUCTOR INTEGRATES TECHNOLOGY FOR SECOND

LANGUAGE LEARNERS

by

Junko Handa

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DISSERTATION APPROVAL FORM

This is to certify that the dissertation prepared by Junko Handa, entitled The Evolving Perception of Technology: An Experienced English Instructor Integrate Technology for Second Language Learners, has been approved by this committee as satisfactory completion of the requirement for the degree of Doctor of Education in Instructional Technology, in the Department of Educational Technology and Literacy.

_____   _____
Chair, Dissertation Committee   Date

Dr. Barbara Laster

_____   _____
Committee Member   Date

Dr. William Sadera

_____   _____
Committee Member   Date

Dr. Paul Jones

_____   _____
Committee Member   Date

Dr. Steve Mogge

_____   _____
Dean, College of Graduate Studies and Research   Date

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ABSTRACT

THE EVOLVING PERCEPTION OF TECHNOLOGY: AN EXPERIENCED ENGLISH
INSTRUCTOR INTEGRATES TECHNOLOGY FOR SECOND LANGUAGE
LEARNERS

Junko Handa

This qualitative case study investigated the perceptions and challenges an experienced

college English instructor faced in the transformation of learning environments as his use

of technology evolved. This one-year research project, involving international students as

participants, evaluated the instructor's adoption of technology using *Levels of Use of the

Innovation* (LoU) (Hall, Loucks, Rutherford, and Newlove, 1975). The data were

collected through interviews with the instructor and students, e-mail correspondence,

transcriptions of discussion board threads, students' papers, and the researcher's logs as a

technology mentor. The data were analyzed using N6 Software and other inductive

methods. The instructor's decision-making was mapped over time. Findings revealed

gradual, though not linear, open-mindedness and integration of technology as a result of

skill-building, direct contact with technology, time to reflect, recognition of positive

student outcomes, and mentoring. The type of mentoring was significant, as was the

professor as an agent of his own changing pedagogy.

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CHAPTER I. INTRODUCTION

You have to protect yourself from thinking, *Oh wow! There's so many cool things you can do with a computer…* Over my career I've seen new gadgets come along and new techniques, and new this and new that, and some of them have some real value and real merit, and a lot of them are just *Oh, isn't this wonderful?* The underlying pedagogical value isn't lost…over because the tool itself is so wonderful, and so new and so exciting, and yet has possibilities. My theory is [that we have to protect ourselves from being] susceptible and gullible to new bells and new whistles. (Dr. Ish,   September 22, 2005)

Many instructors have started using technology, but are struggling with integrating it into their courses. Others, resist using it at all. They may have not discovered clear evidence of the positive effects of using technology. Or, even though they noticed the potential benefits, they do not always have appropriate knowledge or skills to use it (Debski, 2000). They also may suffer from uncertainty about whether the innovation can provide more effective instruction than the current methods (Rogers, 1995). Investigating instructors' perceptions may uncover key aspects for technology integration.

The purpose of chapter one is to provide background information about this research as well as an overview of this study. This chapter consists of eight sections: background, statement of the problem, purpose of this study, significance, research design, research question, limitations, and a definition of terms.

The background section provides qualitative descriptions that illustrate the context of this research and the subject of this study. The statement of the problem, the purpose of this research, and its significance establishes a foundation for the importance of this study in the field of education. In addition, the basic research design, research questions and limitations of this study offer an overview of the research methods.

Background

This qualitative case study investigated an experienced instructor's initial reluctance to use instructional technology in his teaching and his gradual acceptance of it. The subject was Dr. Ish, a highly respected veteran instructor with thirty-years' experience teaching English courses, including those designed for English for Speakers of Other Languages (ESOL) students. His nickname is Dr. Ish because he is known for using the novel *Ishmael* (Quinn, 1993) in his English composition classes. He is a tenured faculty member at a Mid-Atlantic state university, where about 1,000 international students from more than 100 nations matriculate.

At the institution, he is one of the most respected and well-known professors among all students, and the international students adore him. In the beginning of their college careers, before the international students take his course, many of them do not know how to read academic papers, much less write them.

In the broad hallways of the Liberal Arts Building, students are using the Internet on their own laptop computers, completing assignments for classes, checking their personal email, or surfing the net. Equipment service personnel push carts that carry a computer and an LCD projector. There are three computer labs in the building, updated with the latest computers and a state-of-the-art at a teacher's station. Campus-wide, a wireless network is available for administrators, staff, faculty, students, and guests.

Dr. Ish has been curious about the recent development of instructional technology, even though he has taught English for many, many years without using it. He has noticed that the new technology is being incorporated into his colleagues' college courses. In the Language Lab, cassette tapes are no longer used for aural and oral practice because of the

shift to digital files that can be accessed through computers. Some English professors have started using learning management software, such as Blackboard; others have taken their classes into a computer lab to demonstrate how to revise written essays, using a word-processing program.

Although Dr. Ish has not integrated technology into his teaching, in his private life he does use some new forms of technology. He has a new type of multifunction cell phone and a new hybrid car. Twenty years ago, he bought his first computer for personal use. He recalls the old days when he had to struggle with complicated procedures to send files. Now, he easily uses e-mail, but he does not consider himself a *techie*; he just *uses* technology. He sometimes refers to himself as *anti-technology* whenever he becomes frustrated with it.

Dr. Ish is the type of person who can get along with people from many countries, regardless of their ages, educational backgrounds, or familiarity with American culture. Even when people are not able to speak English, he can somehow find a way to communicate with them. He has lived in several different countries and is very open-minded about all cultures. As an English professor, he focuses particularly on how he can best help international students develop communicative English skills in the United States. He observes English instructors using other forms of technology and is curious about these new avenues for linking technology with teaching. Yet he is hesitant to use it in his classroom because the world of technology to him is more foreign than any foreign country. He is uncertain and skeptical about entering the world of these new, supplementary teaching tools in his classroom, afraid it might infringe upon his well-

developed and highly successful curriculum. Yet, he remains open-minded about its possibilities.

One day during the summer of 2004, when the campus was virtually empty, Dr. Ish finally knocked on the door of the Language Lab to ask its manager about the possibility of using the Lab's technology for an upcoming fall course. But he accidentally knocked on the wrong door and was surprised to find the familiar face of a former student. "I am sorry; I knocked on the wrong door. I am looking for Mike, the Lab manager," he said— but he continued to speak to the student about his interest in finding out about the technology he could possibly use to augment his teaching.

This is how Professor Ish and that student, this researcher, formed a new bond focused on the integration of technology into one's teaching. They continued to meet regularly and started working together to explore how Dr. Ish could best use technology, such as Blackboard, in his classes.

In December 2004 and January 2005, Dr. Ish learned basic functions of technology and decided to use his new skills, in a limited way, during the spring 2005 semester— with the assistance of his newfound mentor, the researcher of this study. After a one-semester trial of using such technology, he began to see that using technology could complement some types of courses, such as math or physics, but that its use would be incompatible with his writing courses as well as his teaching philosophy. He continuously expressed workload issues and his skepticism about technology: "Technology is an extra time eater. For instance, uploading course material to Blackboard takes time. I'm not angry with technology; I'm just maintaining a cautious, healthy skepticism about it." He had taught English courses for many years without using

instructional technology, so whether he could ever see the value of using it is the story that unfolds in this research.

Statement of the Problem

Several researchers have used innovation or adoption theories in quantitative studies to describe instructors' use of technology (Signer, Hall, & Upton, 2000; Christou, Eliophotou-Menon, & Philippou, 2004; Newhouse, 2001). However, instructors' pedagogical transformation related to their evolving perceptions of technology, and factors that affect the decisions and rate of adoption have not yet been clearly revealed (Parks, Huot, Hamers, & H-Lemonner, 2003). There has been little in-depth qualitative research on the evolution of successful technology integration. Few research studies have examined what goes on in the experienced instructor's mind as he or she wrestles with how to incorporate technology into an existing, successful course. Many researchers have investigated pre-service teachers; others have emphasized the use of mentoring models with pre-service teachers (Neapolitan, 2003; Mullen, 2000; Hargreaves, & Fullan, 2000).

Purpose of This Study

The purpose of this study is to investigate the case of one experienced instructor of English for international students, focusing on his evolving perceptions of technology, including his initial reluctance to use it and his gradual acceptance and adoption of it. The context of this study was the learning environment of a college-level English classroom that was specifically focused on literacy development for ESOL students.

Significance

Technology has expanded to include communication tools such as email, instant

messenger, discussion groups, newsgroups, and chat rooms (Barnes, 2002). Such online

interaction, otherwise known as computer-mediated-communication (CMC), is defined as

"a form of electronic written communication" (Barnes, 2002, p. 4). Using various

formats, these uses of computer technology have now been incorporated in traditional

language instruction to help facilitate dynamic communication between instructors and

students. Of particular interest is the inclusion of written communication in electronic

interaction (Gonzalez-Bueno, 1998; Barnes, 2002).

Several language instructors tried to integrate technology into their instruction during

the 1990s (Chapelle, 1997; Gonzalez-Bueno, 1998). Many veteran instructors were

energetically seeking creative uses of new technology for instructional purposes. They

continually investigated these new forms of teaching methods for their courses. On the

other hand, there were some veteran instructors who resisted the new instructional

methods (Evans, 2001). Some instructors lacked the technological knowledge and skills

to incorporate technology into their courses (Fullan, 2001). Some instructors still have

not discovered sufficient evidence of the positive effects of using technology, while

others, even though they believe in the potential positive effects, do not always have the

skills to integrate technology into their courses (Debski, 2000). Instructors' pedagogical

changes in relation to technology and their conceptualization of using technology in their

courses have received little attention in the research field (Parks et al., 2003).

Investigating an experienced instructor's *perceptions* of new technology is an

important starting point when helping individual instructors integrate technology into

their courses. It also helps establish the appropriate use of technology for each teaching-learning situation encountered by other educators who face similar challenges (Parks et al., 2003). Furthermore, as the use of technology is evolving in a deictic manner (Leu, 2000), research about how technology is integrated into educational settings can provide a vision for its future uses.

Thoroughly documenting the evolving perceptions of an instructor's use of technology and investigating the key factors that affect that use provides insight into what other instructors face when using technology for the first time. The findings of such studies may prove to be very helpful for instructors and the professional development staff who assist instructors as they integrate technology into their courses. In-depth documentation of a few key cases could assist future researchers and others who confront similar challenges. Although there has been some attention paid to pre-service teachers, veteran in-service teachers must also become a part of the trend toward constantly changing technology. There will always be experienced instructors who face difficulties in keeping up with new instructional technologies. Since few studies have involved conducting a one-year, in-depth examination of a single experienced instructor, the findings provided by this research serve to provide an unexplored aspect in the study of instructional technology.

<div align="center">Research Design</div>

This research was a qualitative case study of an experienced instructor's evolving perceptions of using instructional technology in his English writing courses. The data were collected from the following sources: (a) The researcher's logs about the instructor's technical training, (b) email correspondence between subject and researcher,

(c) transcripts of asynchronous discussion forums contributed by students and the instructor, (d) weekly interviews between the instructor and the researcher, (e) interviews with selected representative students (n=5), (f) the students' course papers, and (g) student informal course feedback from the spring 2005 semester. The data were analyzed using N6 Software and other inductive methods, including coding, identifying categories, and interpreting data. In addition, the instructor's gradual adoption of technology was evaluated using *Levels of Use of the Innovation* (LoU) developed by Hall, Loucks, Rutherford, and Newlove, (1975).

<div align="center">Research Questions</div>

This research investigated an experienced instructor's evolving perceptions of using technology, the factors that affected his decisions, and the rate of his adoption of this technology in a college composition course for international students. This study also examined the challenges the instructor faced in the transformation of his learning environment through the use and integration of technology. The research questions used to guide this study were as follows:

1. How does the instructor's *Levels of Use* regarding technology change over time?

2. What are the instructor's perceptions, including challenges, of using technology in the English course for international students?

   (a) How do the instructor's perceptions about using technology evolve over time?

   (b) What are the instructor's challenges with using technology?

3. What factors influence the instructor's decisions regarding his adoption of technology?

Limitations

Qualitative research is conducted in a natural setting, and as such many phenomena are not controlled (Creswell, 1998). Since this study investigated only one participant, the findings of this case may not be applicable to other instructors. This study was also limited by the influence of the potentially biased perceptions of the researcher's perspectives as a technology mentor and close colleague. Furthermore, the data collection procedures were slightly different between the spring 2005 semester and 2006 semester.

Definition of Terms

The following terms were used in this research and will be used throughout this dissertation. The terms and definitions are listed as follows to provide a clear understanding of how these terms were employed in this research. These definitions are not fixed, and other interpretations may be possible, based on the context of the terms.

Technology: Although technology is a vague term, because the instructor used the term, *technology*, this study uses the same term according to his definition. The instructor used the term of technology to indicate electronic tools that he uses for instructional purposes such as computers, DVD, language lab functions, etc. However, he also used the term of technology for communication tools such as email or other communication functions, asynchronous and synchronous discussion forums in a learning management system; learning management system itself; electronic media, such as digital sound files; Web resources; and word-processing functions including *Track Changes* in Microsoft Word.

Computer-Mediated Communication (CMC): This is "A form of electronic written communication," (Barnes, 2002, p. 4), such as online discussions and receiving feedback on electronic paper using *Track Changes* in Microsoft Word.

Learning Management System (LMS): "Commercial learning management systems," such as Blackboard and WebCT (Godwin-Jones, 2002, p. 5).

Blackboard: Blackboard is course-management software that supports online courses and activities for the courses. The institution allows the instructors to use the Blackboard portal and its functions. This is the only online course-management system that is available to the instructors in the institution. In the Blackboard system, there is a function called *Discussion Boards* that allows students to participate in online discussions at anytime. Discussion forums are asynchronous.

Microsoft Track Changes: This is an editing tool included with Microsoft Word. Track Changes can be found under *Tools* in the Microsoft Word menu. The editing record of the paper can be identified easily, using of several color codes and editing traces. The instructor can give feedback without deleting students' original phrases or errors, and the students are able to choose whether to accept or reject the changes.

Synchronous discussions: Synchronous discussions provide instant responses from another person or persons; the participants agree to be online at the specified time. Since this type of communication employs real-time interactions, it virtually provides the benefit of face-to-face communication (Smith, 2003).

Asynchronous discussions: Asynchronous discussions involve sending messages at various times; thus, there may be time lag in communication. Traditional letters that are handled by the post office are also considered asynchronous communication. Email and

online discussion forums that do not require an instant response are used as a mode of asynchronous discussions (Smith, 2003).

Perception: In this study, perception refers to how one perceives and processes information cognitively. Perception refers to the instructors' and the students' concerns, concepts, culture, and belief systems regarding the use of technological innovation in the context of coursework. Perceptions are continuously changing; thus, in this research, the professor's perceptions were observed and documented regularly.

In some research, perceptions are obtained and analyzed according to a standardized test. In this research, however, the instructor's perceptions were observed and analyzed according to what the instructor revealed in the interview process, emails to and responses from the mentor, and the mentor's observations in her mentor's log.

*Ownershi*p: Ownership occurs when the instructor evaluates a situation and makes a decision about what form of technology he would use and how he would use it. Although the instructor receives feedback or advice from the mentor, the instructor is the agent. He has control over the decisions related to his pedagogy.

<div align="center">Summary</div>

This chapter provided the overview of this research. This was a one-year examination of an experienced English professor's technology integration into his English course for ESOL students. This study was a qualitative case study and used multiple data sources. The study rated his progress in the use of technology, examined his evolving perception and challenges, and identified factors that affected technology integration. Specifically, the research context was descriptively presented to indicate the boundaries of this

research. The details of the research design and procedures are presented in the following

chapters.

CHAPTER II. LITERATURE REVIEW

This study focused on an experienced instructor's adoption of technology in the classroom. His evolving perceptions toward technology, the challenges he faced, and the factors that influenced his decisions regarding the integration of technology in a college composition course for international students was examined. While attempting to answer the research questions, four areas were examined that form the conceptual framework for this case study. They are: (a) characteristics of CMC, (b) learning theories related to CMC, (c) teaching philosophy and the use of technology in second language instruction, and (d) faculty development and innovation adoption.

Characteristics of CMC

Identifying the characteristics of CMC can provide an overview of its features and its advantages and limitations. Investigating the use of CMC features helps to provide background for understanding the instructor's perceptions of CMC. Specifically, three key aspects of CMC illuminate this study. Smith, Alvarez-Torres, and Zhao (2003) describe three characteristics of CMC that reflect its benefits: *modality, spatiality*, and *temporality*.

Modality is what CMC can include to present information (Smith, Alvarez-Torres, & Zhao, 2003). For example, CMC can employ mainly text, but also digital sound, illustrations, and motion pictures. CMC has unique and evolving modalities, which may allow an instructor to create a favorable learning environment by using different modes of technology. Focusing on the modality may help a user decide whether CMC would be an appropriate technology to suit his needs. For example, when a teacher wants to have his students learn about a country or culture, he or she can use different modalities for

students with different learning types, such as text, static or motion pictures of sites, video clips with sounds, or a virtual game of a simulated trip in the country.

If a teacher or a student perceives that CMC would not have an appropriate modality, he or she may decide to use other communication methods, such as a telephone or in-person meeting. When online communication was first developing, researchers argued about its lack of direct interpersonal contact. CMC was considered a cold method that disregarded peoples' inherent desire to fully express themselves, although users recognized its potential benefits (Barnes, 2002). Because CMC does not employ the human characteristics of communication—such as eye contact, facial expressions, and body movement—the non-human characteristics of electronic discussions created a cold first impression. Although Hiltz and Turoff (1978) stated that the use of email in business has the potential to provide many advantages, they also described its inability to communicate human sentiment. Ten years later, Rice and Love (1987) indicate that electronic discussions *do* include socio-emotional aspects. They found that people shared their interpersonal information, such as tension, tension relief, agreement, disagreement, and antagonism when using this medium.

Current CMC can provide human communication and the interactive sharing of information through computer networks, such as e-mail, discussion groups, news groups, chat, instant messages, and web pages (Barnes, 2002). Improvements in authentic communication began in the field of language instruction. After the email diffusions, learning management programs such as WebCT and Blackboard were developed (Godwin- Jones, 2003).

Some researchers suggest that, although CMC is mostly written communication, it can provide the same opportunities to negotiate for meanings that can be found in face-to-face interaction. Some researchers suggest that online interaction could be even more effective than face-to-face interaction (Lamy & Goodfellow, 1999; Sutherland-Smith, 2002).

In addition to the communicative benefits, computers and Internet functions have become learning or instructional tools for foreign language classrooms. In the past, the major forms of instructional technology used in foreign language classes included radio, newspapers, filmstrips, tape recorders, 16mm films, and videos (LeLoup & Ponterio, 2004). Instructional technology used in second-language instruction has shifted from the former instructional technology to a digital learning environment that uses digital sounds and motion pictures, as well as Internet functions (Godwin- Jones, 2003).

Current word-processing software, including advanced editing functions such as Microsoft Word's Track Changes, is also used in the classroom. With this function, the instructor can digitally give feedback and suggestions to students regarding grammatical, organizational, and content-related errors. These comments and corrections employ the use of colored texts, and the writer can see his or her own draft and feedback clearly.

The full implications of using technology as a tool for literacy development have been characterized as *new literacies* (Leu, 2000; Leu, Kinzer, Coiro, & Cammack, 2000). Writing and reading messages via CMC is also considered a new literacy which may not always be comprehensible in the same way as the traditional linear format.

The next characteristic is spatiality, which involves the beneficial aspects of using technology that can facilitate communication regardless of an individual's location.

Furthermore, a user can control the distance by arranging the settings, using their avatars or other items in online chat. A key element of CMC is to allow universal participation in individual geographical locations. Recent innovations that have eliminated spatial barriers and other innovations have made the world much smaller (Harvey, 1989). Learning occurs when computers support students' interactions, such as discussing, arguing, and developing compromises (Jonassen, 2000). Students can participate in online communication outside of class time; they can use computer technology as an additional form of communication in which they can exchange ideas in an online learning environment (Weasenforth, Biesenbach-Lucas, & Meloni, 2002; Kramsch, A'Ness, & Lam, 2000; Sutherland-Smith, 2002). CMC is another way for people to communicate with each other. Students who seldom have a chance to use languages they are studying can communicate with native speakers of that language living in other countries (O'Dowd, 2003; Mülller-Hartmann, 2000; Stepp-Greany, 2002; Greenfield, 2003; Belz, 2002; Nutta & Spector-Cohen, 2002; Furstenberg, Levet, English, & Maillet, 2001). Hannafin and Land (1997) stated that technology is a useful tool whenever it would be difficult for a learner to understand or explore a language in depth. Class hours are limited, but now students have at their disposal, another method of communication via CMC.

The third characteristic highlighting the benefits of CMC is temporality. It focuses on the type of communication that depends on the time of responses (Smith, Alvarez-Torres, & Zhao, 2003). Two modes of CMC can be used to communicate. One is asynchronous, in which a message can be sent at anytime; in this mode, there may be time lag in communication. For example, the traditional letters that are handled by the post office

are considered asynchronous communication. Email and online discussion forums that do not require instant response are considered asynchronous discussions (Smith, Alvarez-Torres, & Zhao, 2003). In contrast, synchronous discussions provide an instant response; the participants must be online at a specified time. For example, online chat or instant messages are considered synchronous communication. Since this type of communication utilizes real-time interactions, it more closely resembles aspects of face-to-face communication (Smith, Alvarez-Torres, & Zhao, 2003).

Smith, Alvarez-Torres and Zhao (2003) suggest that temporality impacts the discourse and the way the writer constructs questions and responses. Sotillo (2000) conducted an experimental study using synchronous and asynchronous discussions for advanced ESOL writing courses. This study indicated that there are differences in students' writing within the two environments—synchronous and asynchronous. Synchronous discussions involve more immediate interaction that is controlled by the students. Students can lead discussions by themselves. The sentences that were produced in the synchronous environment had a short and simple format, but, because of time constraints, they were more likely to contain errors (Lee, 2002). In contrast, the sentences that were produced in the asynchronous environments produced more complex sentence structures and contained fewer errors. Since asynchronous discussions allow students to think and edit their own writing before they post it, they tend to post more precise sentences with well thought out ideas (Sotillo, 2000).

In conclusion, electronic communications can provide new opportunities to negotiate meanings. CMC provides a digital learning environment that can employ digital sounds and motion pictures, and Web resources. Using such digital resources, students can

better facilitate communication regardless of individual locations. CMC allows

participants to use two types of communications: synchronous and asynchronous. Both

are available using CMC, and the instructor can choose which form would be best for his

instructional goals.

<div align="center">Learning Theories Related to CMC</div>

Clarifying the overall value of using CMC helps researchers to understand the

instructor's perception of the values of using CMC. Thus, the instructor's perceptions are

put in a larger context. The use of CMC can be tied to several learning theories such as

collaborative learning, and situated cognition theories. CMC can support interactions

that are considered important by many researchers. Such interactions help students

develop their ideas and help them become better writers.

The use of CMC is an outgrowth of learning theories. Since CMC allows students to

interact with each other, students can learn from peers. Vygotsky (1978) provides one

relevant learning theory. He did not discuss using CMC; however, the importance of

interaction can be applicable to the learning environment using CMC. Vygotsky (1978)

suggests that students achieve better learning outcomes if they have appropriate help or

guides. The idea is that there is a range between an individual's actual level of

achievement and his potential level of achievement. The individual can progress towards

his full potential if he or she receives the stimulus and intervention of other more skilled

individuals. This gap between the actual and potential levels of achievement is called the

zone of proximal development (ZPD). The students may be able to produce better

learning outcomes if they receive appropriate guidance from their teachers, partners or

classmates. According to Vygotsky, the social context of learning is a key component.

Peer collaboration and interaction provide scaffolding for students to reach higher levels of achievement. The interaction via online communication may fill the gap of the ZPD. Furthermore, CMC expands the wide-range of interaction with people who are geographically separated and provides students with other spaces to communicate with others. A peer can be anyone who can participate in a discussion forum, and the guidance can include written texts, visual aids, sounds, or other Internet resources.

Another relevant learning theory is the theory of situated cognition (Brown, Collins, & Duguid, 1989; Lave &Wenger, 1991). This theory indicates the importance of authentic learning activities. The researchers and theorists, who support the situated cognition theory, emphasize that a student should acquire more practical knowledge that they can use in their real lives (Brown, Collins, & Duguid, 1989; Lave &Wenger, 1991). In other words, a learner should not simply acquire the knowledge, but should develop the knowledge until he or she can identify how to use the knowledge and skills appropriately (Brown, Collins, & Duguid, 1989). Furthermore, Schoenfeld (1988) also states that knowledge can be inert and unused if it is taught without context. Students who study foreign languages often express a lack of practical language skills. This fact seems to relate to the lack of authentic opportunities for practice. Language use for communication purposes in language learning can be considered an authentic practice. Using language for communication can help learners acquire a sense of how the words and phrases are used in the appropriate context. A significant learning method employs a process of learning the meaning of a word by seeing or hearing it used in a real world context (Brown, Collins, & Duguid, 1989; Wilson & Mayer, 2000). Communicative situations help a learner to construct genuine meaning. Learning that is developed in a

culture or community where the knowledge can be used is a significant aspect of situated

cognition because it helps a learner understand the way that practitioners see the world

and use language (Brown, Collins, & Duguid, 1989; Wilson & Mayer, 2000). People

learn the appropriate ways and patterns of how to respond in particular contexts.

Learning occurs when a learner participates in social interactions that take place within a

framework whereby they acquire the necessary tools, skills, knowledge, beliefs, and

values in the community (Wilson & Mayer, 2000).

E-learning using Internet functions may be a possible platform for situated or

contextual learning (Hung & Cheng, 2001). In other words, interactive activities in CMC

help learners develop their own conversations and understand meanings from the

interactions (Murphy & Collins, 1997). In the past, students learned additional languages

from textbooks, audiotapes, and video clips, but since there were limited class hours,

students had limited communication practice with others. However, the use of CMC

allows students to have authentic communication through more meaningful reading and

writing exercises. Therefore, CMC can employ authentic practices for language learners.

Current perspectives of language instruction stress the importance of constructive

comprehension, which allows people to understand and have distinct perspectives based

on their individual experiences (Gee, 2001). Gee (2001) and Rosenblatt (1983)

emphasize that individual experiences help people by giving meaning to the words, and

these experiences are not simply information and facts, but carry values and perspectives.

Their point is that language should always be situated along with values, purposes, and

actions. In other words, social interactions play an important role in literacy acquisition.

Kucer (2001) suggests that the brain, via the eyes, selects certain information when people read. For example, background knowledge helps readers perceive information. Readers try to connect new information to their prior knowledge or construct new ways of thinking to absorb new knowledge by assimilating or accommodating the information. Kucer's idea was related to Piaget's (1969) process of development that suggests assimilation, accommodation, and equilibration. Furthermore, Kucer (2001) suggests that writing employs more transitive and recursive actions. When a writer begins constructing text, he or she seeks appropriate background knowledge, and the writer assesses whether the knowledge can be used for the writer's purpose and goals of writing. The important task is organizing background knowledge. During the constructing of text, the writer encounters mismatches between task and prior knowledge; thus, the writer keeps searching in order to match the text and the knowledge. In this way, a writer restructures knowledge or learning by writing (Kucer 2001). Therefore, sharing ideas with peers and having discussions before composing may be helpful to writing.

From a theoretical basis, electronic communication can provide a virtual space in which students can gain language experiences, and organize knowledge and ideas for writing. Students can interpret texts based on their language experiences in electronic discussion forums. Moreover, CMC allows participants to interact with each other. Forman and Cazden (1986) suggest the advantages of peer tutoring and peer collaboration for literacy development based on Vygotsky's theory (1987). A student can be not only the writer, but also a helpful questioner, when working with a fellow student. Halliday (1994) also indicates how interaction with adults or peers who have higher knowledge or skills can help students to construct meaning. Each conversation in a

certain setting can be meaningful to the student, and the words and phrases are tightly connected to that situation. The student can learn to intertwine the language and situations to make sense of the world. However, when students read texts, a gap may occur between the student's interpretation and the teacher's expectation. The teacher can motivate the student to think more and to find different interpretations from the key lines by asking appropriate questions (Hull & Rose, 1982). The critical aspects involved in language and literacy are that language is tightly connected to a context, and that by interacting with others, students are exposed to many interpretations and are therefore encouraged to think more. This will be stored with the individual's language experiences.

Learning environments using CMC can be directly related to the ideas shown in these studies; they can create virtual situations associated with the language in which the learners can gain language experiences. CMC is another way to communicate with classmates and instructors. One of the key functions of using online discussions is the interaction function that uses synchronous and asynchronous discussion forums. Using this interaction function, communication with peers—some of whom may be more skilled than others—may help a learner construct correct meanings, encourage them to think more, and guide their interpretations (Halliday, 1994; Hull & Rose, 1982). Furthermore, Benbun-Fich, Hiltz, and Harasim (2005) suggest that the process of collaborative learning development in online discussions follows the following process. First, individual learners share their ideas about the subject with each other. Next, the individual learners try to link their ideas to those of their peers and to develop their positions while reflecting other opinions. Third, each idea is reconstructed by the participants and thus will help develop shared comprehensions.

A series of research studies have supported the idea of interactions as meaningful elements for literacy development (Forman & Cazden, 1986; Halliday, 1994; Hull & Rose, 1982; Benbun-Fich, Hiltz, and Harasim, 2005). Some researchers specifically illustrate the relationships between developing thinking and writing. Elder and Paul (2006) state the connection between thinking and writing when they claim that students improve their writing ability as they gain knowledge and improve their thinking ability. In addition, Stoehr (1967) emphasizes the importance of having a writer's perception, awareness, and reflections about the objects or reality in his writing. He also states that including the writer's insights is the value of writing, which readers want to find.

In conclusion, the use of CMC can be connected to several learning theories, and integrated into a learning environment within each paradigm. Because CMC supports interactions that are considered important by many researchers, CMC can help students learn. In other words, CMC can help students comprehend text and develop ideas, so that their writing can improve because it includes their in-depth views. Using CMC has value for writing, as well as literacy development.

Teaching Philosophy and the Use of Technology in Second Language Instruction

Instructors teaching philosophies and beliefs reflect their teaching styles and course design. Their beliefs may be connected to their technology integration in their courses. Thus, illustrating the relationships between teaching philosophy, teaching style, and use of technology, can help clarify how perceptions and attitudes toward technology are connected to teaching philosophy. It can help to investigate the instructor's perceptions and conceptualizations of technology as related to his teaching philosophy.

Behaviorism and constructivism are two major teaching philosophies in educational contexts. The behaviorist view came to the field of education in the early twentieth century and dominated U.S. psychology until the mid twentieth century. In the late 1990s, the view became less popular in the field of learning and instructional design (Wilson & Myers, 2000). Behaviorism's goal of instruction is to map the real world. Behaviorists encourage humans to develop concrete knowledge about the world and assume that we all gain the same understanding. The role of an educator is to help students learn about the real world and to discourage students from making their own interpretations of what they perceive. Learners are expected to replicate content and structure in their thinking (Jonassen, 1991). Because of the influence of behaviorism, lab work in language courses mostly had included drill and practice types of computer-assisted instruction from 1950s to 1990s (Chinnery, 2006).

In contrast, constructivist theorists believe that there is no real world. *A real world* is created by individual human mental activity. The role of an educator is to help learners interpret multiple perspectives of the world to create their own world-views. Constructivist instructional goals and objectives are negotiable and not rigid. Learners are encouraged to produce multiple interpretations of reality. Learning occurs when a learner internally controls his or her perceptions. Since learners interpret what they learn differently, evaluation becomes less criterion-referenced, and there are wider varieties of response options (Jonassen, 1991). Since the 1990s, language instruction has used more interactive computer assisted learning due to the influence of constructivism, and CMC has been used in the language classroom (Chinnery, 2006).

The nature of the learning environment is extremely different in a behaviorist approach versus a constructivist approach. Behaviorism requires a systematic process that carefully maps knowledge and skills by providing simple tasks in instructional design (Burton, Moore, & Magliaro, 2004). In other words, behaviorist teachers systematically lead learners to attain the definite learning objective by teaching specific knowledge and skills in order. Therefore, behaviorist instructors may be able to pinpoint when they want to use technology and specifically how they want to use it.

In contrast, the objectives of the lessons are more open-ended in a constructivist approach. A constructivist learning environment is much more complicated. The constructivist approach suggests a learning environment in which students can negotiate meaning and construct reality within a social context (Jonassen, 1991). Because a constructivist approach requires more complex and creative instruction that focuses on student-centered learning, it could not provide a simple liner learning model. Rather, it forms a variety of learning environments. Therefore, since there is the lack of constructivist technique in the field, Jonassen (1991) suggests that constructivists should establish more techniques to design the learning environment using instructional technology.

Language instructions have shifted toward a more constructivist approach. Leki (1992) states that ESOL teachers in the United States have focused on communication aspects rather than grammar accuracy. Krashen (2003) suggests the *comprehension hypothesis* and stresses the importance of giving comprehensible input to learners so that they can acquire grammar rules naturally. Krashen (2003) also points out the importance of distinguishing conscious and unconscious learning, which flows from a more

constructivist approach. He argues that remembering every grammar rule is too complicated. If students remember every grammar rule, they can only produce language consciously while thinking about grammar. In other words, the traditional grammar-based approach cannot help students acquire language fluency. In addition, he states that conscious of learning, which focuses on memorizing grammar rules, has only one positive function: to correct errors after the learner produces the sentences. In fact, Van Patten and Cadierno (1993) found that the group that had the comprehension-based instruction performed significantly better than the group that had traditional grammar-based instruction.

In contrast, Swain (1985) suggests that comprehensible input is important, but comprehensible output also has a significant role. Students find meaning through interactions, and this is essential for second language acquisition (Swain 1985; Long, 1985). Considering these arguments, Chapelle (1998) suggests that it is important for learners to have opportunities to produce the target languages and have particular audiences. Furthermore, learners must recognize and correct their own errors. This process helps the learners to produce more accurate output (Nobuyoshi & Ellis, 1993) and eventually revise according to their own reviews (Chapelle, 1998). Thus, CMC can be used for interactions with peers for language instruction.

Using technology may not be easy for instructors, and the different perspectives about technology can influence the way technology is used in the course. Such inclusion of technology and instructors' perceptions may have an impact on the course. Just being told to change a curriculum does not work; rather, educators need to have a strong commitment to such change. Schubert (1986) stated that curriculum improvement may

be successful if the educators find relevant reasons that support their ideal teaching

philosophy and context. Educators have been expanding their ideas of learning and

learning environments along with technological advances (Land & Hannafin, 2000).

Beliefs about learning should lead course design, transformation in curriculum, and

instruction.

In sum, the instructors' beliefs do influence how the instructor integrates technology.

Teachers who believe in behaviorism use more drill and practice types of computer-

assisted instruction because behaviorists provide simple tasks to develop their knowledge.

However, if an instructor has a constructivist belief, the instructor may face challenges as

to how he integrates technology. Because of the nature of constructivism, the specific

ways of using technology and creating effective learning environments are not clearly

suggested in the field. Yet, the field of language instruction has incorporated into the

constructivist views by using interactive activities. Instructors' beliefs about learning

influence their course design, and unless instructors find appropriate reasons to alter their

teaching philosophy, changing curriculum may be difficult.

Faculty Development and Innovation Adoption

Exploring the field of faculty development in technology can indicate key aspects

related to instructors' perceptions. Identifying the general innovation adoption process

can help to evaluate the instructor's development of technology integration skills and

knowledge appropriately.

Levels of Use and Associated Concerns

The classification of different levels of technology integration can be beneficial to

the identification and interpretation of an instructor's perceptions regarding technology at

a given time. This knowledge can help the researcher to address the instructor's concerns

in order to maintain further integration of technology. Recognizing a general milestone

of adoption and the shifting concerns related to that milestone can help one to evaluate

the instructor's adoption of technology and his evolving perceptions toward technology.

Even though potential advantages are introduced to the instructors, adopting

technology in instruction may not be easy and requires several stages toward full

adoption. Hall, Loucks, Rutherford, and Newlove (1975) suggest the LoU. They

emphasize that innovation is a process that an individual goes through for adoption (Hall

et al. 1975). The model has been well-known as one of the three dimensions of the

Concerns-Based Adoption model (CBAM) since the 1970s (Newhouse, 2001). The LoU

includes eight different levels to measure innovation adoption, which is especially useful

in educational settings (Hall et al. 1975). The stage begins with ignorance of innovation

and develops into active and effective adoption. The LoU shows whether a teacher's

perceptions and behavior are evolving with technological innovations (Hall et al. 1975).

It is a process that the teachers go through as they acquire knowledge and skills to adopt

the innovation. Levels of Use progress along a continuum from *no use* to *renewed* and

continuous use, considering such influencing factors as short-term and long-term effects

as well as modifications of use. Furthermore, each level has seven categories: *knowledge,*

acquiring information, sharing, assessing, planning, status reporting, and *performing*.

The Levels of Use are evaluated based on the user's statement reflecting on his or her

perception (Hall et al. 1975).

In addition, the CBAM includes Stages of Concerns (SoC), which focuses on

individual's concerns regarding the adoption of technology. Each stage is compatible to

the LoU and also progress along a continuum from little or no awareness of the innovation to reflective use of the technology (Hall, George, & Rutherford, 1986). In the early stages, teachers express concerns about management issues, and then as teachers gain more skills and knowledge, their concerns tend to shift from management issues to the consequences of the change. Finally, their major concerns move to collaboration and refocusing to produce better outcomes (Anderson, 1997). Several researchers conducted quantitative studies using the SoC of CBAM (Signer, Hall, & Upton, 2000; Christou, Eliophotou-Menon, & Philippou, 2004; Newhouse, 2001). Signer, Hall, and Upton (2000) indicated that in the beginning, teachers showed a high percentage of awareness, informational, and personal concerns. They have concerns with having information about using online components, how it affects them personally, and how it fits their traditional teaching styles. If they go through the personal concern-stage, their concerns lessen in the management and consequence concern-stages. Finally, their concerns gradually increase during the collaboration and refocusing stage.

In contrast, Christou, Eliophotou-Menon, and Philippou (2004) state that there is no relationship between teachers' concerns and involvement with the time for the innovation; however, the teaching experience is a key factor in teachers' concerns. Specifically, experienced teachers indicate higher concerns about the consequences of the innovation. Another argument is that teaching experience and technology instruction experience influence the instructors' perceptions about technology. Meskill, Mossop, DiAngelo, and Pasquale (2002) examined teachers' attitudes toward technology. Their study showed that there were differences in how the instructors saw the technology, depending on the instructors' teaching experiences and technology-use-instruction

experiences. For example, expert instructors who had sufficient teaching experiences, including experiences with technology-based instruction, focused on students and student learning (Meskill, Mossop, DiAngelo, and Pasquale, 2002). On the other hand, novice instructors who had little teaching experience and no experience with technology focused on themselves as instructors. In other words, expert instructors cared about students and students' learning, while novice instructors cared about themselves as instructors and their teaching plans. Furthermore, novice instructors think that technology can affect their plans and tend to see technology as a tool to control learners rather than enhance learning. Also, expert instructors stated that technology should be used in the process of learning; conversely, the novice instructors stated that technology should be a tool to produce products. This study also focused on a transitional expert who had more than twenty-five years of teaching experience, but no experience with technology-based instruction. Initially, the transitional expert did not see any value of using technology and felt that learning technology was a burden. However, after receiving help from an expert for a year and a half, her concept of technology had shifted toward that of the expert instructor. She started to see the value of technology and focused on more student learning (Meskill, Mossop, DiAngelo, & Pasquale, 2002). This study indicates that teaching experience influences how the instructor perceives the technology. The perceptional change while the teachers were involved with technology supports the CBAM as well as the Levels of Use model. The importance of increasing the Levels of Use is related to the essential goal of teaching. "Media are delivery vehicles for instruction and do not directly influence learning" (Clark, 1983, p.147). Instructors

should be aware not just of the existence of technology but of how to use that technology to improve students' learning. Instructors should care about student learning.

In sum, as many researchers suggested, the adoption of technology in the classroom requires several stages while facing several types of concerns. The concerns shift from personal and operational to regarding the students' outcomes, as adoption increases. Furthermore, concerns may differ based on the length of teaching experience. Novice teachers focus on themselves as instructors while experienced educators may express concerns about the consequences of adoption as early as the first stage. In other words, they tend to imagine further into the future. They try to determine whether the adoption of technology will be effective in aiding student learning and be helpful overall.

Key Factors of the Innovation Adoption Process

Exploring the innovation process and the fundamental factors involved helps to determine the critical aspects that influenced the instructor's decisions about the use of technology. Rogers (1995) provided a comprehensive adoption decision model and presented the key factors that influence one's adoption decisions. The validity of these essential characteristics is supported by several researchers. Thus, Rogers' key factors of the innovation adoption process were used as the main framework in this section.

Rogers (1995) states, "An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 11). Using technology in instruction is a new practice to the faculty. Some teachers realize that innovation in technology may include some advantages for potential users. The benefits, however, are not always clear, and the potential users can suffer from uncertainty. They are often uncertain whether the innovation can prove more effective than the current methods. If

advantages are related to individual problems or needs, the potential users make efforts to collect information about the innovation (Rogers, 1995). Uncertainty is one of the key aspects in adopting new technology. Rogers (1995) states that innovation does not occur instantly; rather, it consists of several stages. Thus, it is a process including a sequence of actions or decision-making. He suggests *a model of stages in the innovation-decision process,* which consists of five stages. These stages include knowledge, persuasion, decision, implementation, and confirmation. Each stage is tightly connected with an individual's perspective and attitude based on his or her perceptions of technology.

In the knowledge stage, an individual needs to be aware of an innovation first. Next, an individual seeks information about the technology to discover the advantages and disadvantages. Several researchers suggest the importance of providing meaningful information to faculty members to encourage successful faculty development. The context of the faculty development should be usable in actual courses. Clear evidence of the effectiveness of using technology should be provided to instructors to help them decide how to use technology (Way, 2001). To give the faculty an opportunity to gain understanding about the innovation, faculty development should be conducted at a convenient time and place for the participants. A familiar environment with small-sized groups can help make participants feel comfortable (Grant, 2004).

In the persuasion stage, based on knowledge about the innovation, an individual forms specific attitudes. An individual forms a favorable or unfavorable attitude by mentally applying the innovation to his situation or problem (Rogers, 1995). In this stage, how the individual perceives innovation is important. Rogers (1995) suggests five

factors to consider when deciding whether or not to adopt technology: *relative advantages, compatibility, complexity, trialability, and observability*.

After the persuasion stage, all that is left is the decision, the implementation, and the confirmation. In the decision stage, an individual makes a decision to adopt or reject the innovation. Roger defines the two terms as follows, "Adoption is a decision to make full use of an innovation as the best course of action available. Rejection is a decision not to adopt an innovation" (Rogers, 1995, p 171). Results may vary; some people try out the new ideas or tools partially, whereas others may reject the adoption of new technology without a proper trial. The decision-making relies on the mental exercises.

In the implementation stage, individuals apply the innovation. This stage includes more action and is marked by uncertainty. Individuals seek the answers of how the technology works. During this process, they may find operational problems because they have limited skills about the adoption of new tool.

Brandsford, Derry, Berliner and Hammerness with Beckett (2005) described ways to practice problem-solving that are appropriate from a perspective of efficiency, which is called "routine expert" (p.49). However, they pointed out that this approach is "problem-elimination" rather than in-depth exploration about solving problems (p.50). People practice solving problems quicker and easier. They acquire core competencies that are applicable to their lives seeking greater efficiency. The other group, "adaptive experts," who explore in-depth problem solving, may reduce efficiency, yet in the long run, they will be more flexible, which allows them to restrict core ideas, beliefs, and competencies.

Finally, in the confirmation stage, individuals look for reinforcement of the decision. The previous decision of adoption or rejection may not be the terminal stage. If the

individual encounters conflicts, he will try to re-examine decisions and may change a previous decision. If the individual feels the need, he may start to find information even though he rejected the technology before. On the other hand, the individual who adopted technology once may change his decision to rejection because he will obtain further information that makes him change his decision (Rogers, 1995). This may suggest that the early stages of adoption may be unstable. Accordingly, a longer period of study may be more reliable.

Mentoring Techniques

Appropriate and effective support is related to mentoring techniques. Identifying beneficial mentoring techniques can help one evaluate the quality of interventions. Furthermore, it allows one to examine how the mentor's intervention influenced the instructor's integration of technology as well as his perceptions. These mentoring techniques may be determined to be one of the key factors of the instructor's decisions regarding technology integration. Mentoring techniques are described in this section according to their relationship to Rogers's key components.

Several researchers suggest the importance of having a mentor. Holahan, Jurkat and Friedman (2000) suggest that having mentor could work for professional development for computer use. Learning in practice does not occur on its own. Having an opportunity to connect practice to expert knowledge must be included into the learning experience (Darling-Hammond, et al., 2005). When teachers have an opportunity to reflect on their instruction by linking to theories or research, they are better able to recognize the problems in their teaching or weakness that they need to improve (Freese, 1999). In other words, a mentor should coach a mentee providing specific knowledge that is

supported by theories and research, which can be applicable to a mentee's teaching environment. Thus, a mentee could have an opportunity to reflect other teaching, thereby improving his or her instruction. Furthermore, Fullan (2001) suggests the importance of fostering commitment. Giving members a sense that the change will bring more advantages than problems can generate internal commitment. Argyris (2000) also states two types of commitments, which are external and internal commitment. He suggests that organizational policies or guidelines can activate members' external commitment. Internal commitments should be generated internally in the individuals, and the commitment helps them move forward toward their goals. In addition, several researchers suggest the useful aspects for mentoring, which relates to Rogers's five factors (Rogers, 1995).

Relative Advantages

Relative advantage is whether the teacher perceives the possible advantages of the innovation (Rogers, 1995). These recommendations from several researchers can support relative advantages. Providing valuable information about integrating technology can reduce the instructors' concerns (Wetzel, 2001; Grant, 2004). In addition, the contexts should relate to the instructor's future needs (Grant, 2004). These future needs are related to relative advantages.

Compatibility

Compatibility is whether an individual feels that the innovation employs consistent values and matches with past experiences and needs (Rogers, 1995). Collinson and Cook's (2000) suggestions can be connected to the factor of compatibility. One of the barriers is being overwhelmed. Many instructors do not want to do more work than

required, as they already have a great deal of work. Finding the time to learn something

new in addition to their current duties is difficult; furthermore, using technology can

create unexpected problems. Teachers are concerned that learning technology can be

time-consuming and may end up being a waste of their time. Since many instructors are

used to traditional lesson plans without using technology, changing the old pedagogical

style is an obstacle (Collinson & Cook 2000). Another issue, addressed by Dringus and

Ellis (2004), is that finding appropriate assessment methods to use with new pedagogy is

a difficult task for the instructors. Lee (2000) suggests three barriers to using technology

in school: finances, availability, and acquisition/acceptance of knowledge. Even though

the instructors have basic technology skills, they still do not use technology because of

time constraints, curriculum requirements, and a lack of resources (Egbert, Paulus, &

Nakamichi, 2002). These aspects are related to compatibility because the instructors

perceive that using technology is just extra work and does not fit their traditional

instruction styles.

Schubert (1986) states that there are two types of approaches for curriculum change:

"top-down" and "grass-roosts" (p.374). In the top-down approach, the top authority is

involved in improving the curriculum. Yet, in a grass-roots approach, teachers are the

center of curriculum change. This approach can inspire educators to attend study groups,

to observe similar projects, and to study relevant materials for curriculum development.

Fostering the instructor's ownership of the innovation allows him or her to integrate

technology while dramatically reducing their concerns because the individual instructor

can adjust the level of the use of technology to fit their instruction styles (Wetzel, 2001).

In other words, fostering an instructor's ownership of the innovation provides that

instructor with an opportunity to adjust the incompatible elements to fit into their instruction.

Complexity, Trialability, & Observability

Complexity is the difficulty of understanding and using the technology that an individual perceives. *Trialability* is the degree to which a potential adopter is able to practice using or perform test uses of the innovation. Trialability can reduce uncertainty, and adoption may occur much faster with innovations that are more trial-ready or more receptive to trials. *Observability* refers to the adopter's ability to readily observe the benefits of an innovation. Seeing another person's beneficial results may motivate a potential adopter to use the innovation.

Having peers, such as people from the same department, participate in professional development can be related to the complexity, trialability and observability because seeing what the others do may motivate an individual to try out technology (Grant, 2004). In addition, since the peers from the same department can share the relative advantages and concerns, complexity may be reduced.

Several researchers have supported the five factors (relative advantages, compatibility, complexity, trialability, and observability) in the persuasion stage that Rogers (1995) suggested. According to Rogers (1995), the innovation that includes greater compatibility, trialability, observability and less *complexity* will be adopted more quickly. This statement suggests that although several researchers emphasize the relative advantages to faculty, if these advantages are incompatible to their courses, these advantages may not be sufficient to foster the instructor's adoption of the innovation. The other four categories, compatibility, trialability, observability and complexity*,* may

rely on the technology, yet they also heavily rely on peers' or mentors' work or techniques as well as the adopter's culture and experience. Reducing anxiety and developing new beliefs are important to implementing change, thus implementing change should focus on human and cultural factors. In other words, finding values from the instructors' perspectives are key aspects (Evans, 1996).

Summary

    In this chapter, four areas were examined to form the conceptual framework for this case study: (a) the characteristics of CMC, (b) learning theories: benefits of using CMC, (c) teaching philosophy and the use of technology in second language instruction, and (d) faculty development and innovation adoption. In the characteristics of CMC, three key aspects were described: modality, spatiality, and temporality. Due to these characteristics, CMC can allow instructors to offer a more interactive language instruction over limited class hours. Many researchers state that the interactions via CMC are beneficial for students to develop their ideas, and then express their insights in their writing, which is one of the key aspects to improving their writing. However, the philosophy adopted toward teaching could influence an instructor's integration of technology. Thus, although CMC could provide a more interactive language instruction based on constructivism, behaviorists may try to use drill types of computer assisted learning.

    Instructors concerns may shift as they spend time using technology. However, their concerns may differ depending on their teaching experience. Novice instructors may focus on themselves, yet experienced instructors consider the consequences— whether the adoption will help student learning. A number of key factors regarding the decision to adopt technology were suggested by researchers. One of the most critical factors may

be compatibility because instructors examine whether the innovation would be compatible to their course or not. Furthermore, it is important to focus on the human side of the issue such as their concerns and cultural factors. Thus, mentors should be aware of the instructors' emotions to help them decrease anxiety or developing new beliefs may be necessary.

The key aspects discussed in this chapter identified critical elements in this research, and the identification of these aspects can help one to fully investigate the experienced instructor's adoption of technology, understand his evolving perceptions, and determine challenges and factors influencing his decisions regarding technology integration in a college composition course for international students. The detailed methodology of this study is provided in the following chapter.

CHAPTER III. METHODOLOGY

This chapter provides information about the methods used in this research. The purpose of this chapter is to provide, in detail, the method and design used for collecting data, collection procedures, and the data analysis process. This chapter consists of five sections: research questions, rationale for qualitative case study, research contexts and procedures, limitations and biases, and summary.

Research Questions

This research investigated an experienced instructor's evolving perceptions of using technology, the factors that affected his decisions, and the rate of his adoption of this technology in a college composition course for international students. This study also examined the challenges the instructor faced in the transformation of his learning environment through the use and integration of technology. Following are the research questions used to guide this study:

1. How does the instructor's Levels of Use regarding technology change over time?

2. What are the instructor's perceptions, including challenges, of using technology in the English course for international students?

   (a) How do the instructor's perceptions about using technology evolve over time?

   (b) What are the instructor's challenges with using technology ?

3. What factors influence the instructor's decisions regarding his adoption of technology?

Rationale for the Qualitative Case Study

Qualitative research methods allowed the researcher to discover the subtle aspects and nuances that quantitative research would not be able to discover. In contrast to

quantitative research methods, qualitative methods provide detailed information about the individual participant's perceptions and the ways in which these perceptions shift or change. Furthermore, qualitative methods, unlike quantitative methods, allow for the collection of subtle information (Creswell, 1998). For these reasons, qualitative research, specifically a case study method, was better suited for this research subject.

In general, the researcher was interested in instructors' evolving perceptions about using technology, the factors that affect their decisions to use technology, and rate at which they implement technology in their classes. More particularly, the focus was on the veteran instructors who have rarely used technology in their courses. They are not novices; they are experienced in their craft. They teach courses in various disciplines, but of particular interest are the English instructors. The teaching of English—reading, writing, speaking, and listening—is most adaptable to the various technological platforms. However, there are many veteran instructors who have never used technology in their courses.

In order to examine an instructor's perception of and challenges presented by the use of technology, this project used an in-depth qualitative case study, concentrating on a single subject. The choice of this methodology was deliberate because, as Stake (1995) states, a case study is designed to "catch the complexity" (p. xi) and reveal the detail of its contexts. Stake (1995) also states that case studies are particularly useful for those who study in the field of education or social services.

Case study research methodology is defined "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 1994, p. 13). This study

used the context of a real-life college classroom to understand the phenomena of teacher development and technology integration. The boundaries were an English classroom, which included face-to-face class and supplementary online activities.

Merriam (1998) states that "the single most defining characteristic of case study research lies in delimiting the object of study" (p.27). This study focused on an experienced instructor's perceptions and the multiple factors that influenced his integration of technology within his teaching repertoire. The case was defined by the instructor himself, but was also bounded by his relationship with the technology mentor. Furthermore, it was constrained by time. It was a one-year's exploration of the pedagogical life of a veteran college professor.

Creswell (1998) suggests that qualitative research should be conducted in a natural setting in order to properly interpret phenomena using multiple data sources. Since this study investigated the instructor's real-life course context, focusing on his perspectives toward integrating forms of technology into his pre-existing English writing course, qualitative methods were appropriate for this study. Examining one experienced instructor in a particular setting can reveal valuable insights that may apply to other instructors. In order to discover insights, various data were collected: mentor's logs, weekly interviews with the instructor, student interviews, email correspondence, asynchronous discussion forums, and student papers.

<div align="center">Research Contexts and Procedures</div>

<div align="center">*Participants*</div>

The core informant of this study was an English professor, Dr. Ish, who teaches at a Mid-Atlantic, mid-sized state university. The instructor is a tenured professor, and a

veteran of 30 years' teaching English. Well-liked by his students and much respected by

his colleagues, he has specialized in teaching English as a second language. For most of

his career, Dr. Ish has been devoted to designing an English course to help international

students become more confident writers. Although Dr. Ish had been interested in using

technology for several years, he was reluctant to integrate technology into his courses. In

the spring 2005 semester, Dr. Ish used technology for the first time in his course. He

received individualized training one month prior to the start of the spring semester,

December 2004, and received ongoing assistance whenever necessary during the spring

and fall semesters of 2005.

Nine out of fourteen international students enrolled in his introductory English class,

fall 2005, participated directly in this study. These nine students signed Institutional

Review Board for the Protection for the Human Participant (IRB) consent forms so that

the researcher was allowed to collect their threads in asynchronous discussion forums and

papers. The IRB forms are attached in Appendix A. Of those nine students, seven were

female and two male. Five female students of the nine students agreed to be interviewed

at the end of the semester; henceforth, these informants will be referred to as Amy, Beth,

Cary, Denise, and Elise. All names are pseudonyms to ensure the absolute confidentiality

of all student identities. Based on the students' contributions into asynchronous

discussion forums, the researcher categorized the students into three types of learning

attitudes: *less active, average, and active*. Amy and Beth were from the category of less

active. Cary and Denise were from the category of average. Elise was from the category

of active.

Amy started her course work in the fall 2005 semester and did not have access to a computer at home. Spanish is her primary language, and she has been in the United States just two years. This was the first time she had used Blackboard. Beth came to the United States just before the semester began. French is her native language. She too had never used Blackboard before. Cary came to the United States for the spring 2005 semester. Malaysian is her native language. This was her second semester in the United States. She knew how to use Blackboard before taking this course. Denise had been in the United States for four years. Her native language is Korean. She started taking college courses in the United States in 2002. She had heard about Blackboard before, but this was the first time she used it. Elise came to the United States just before the semester began. Her native language is German. She had used Blackboard before.

Settings

This case study was situated in the ESOL section of an introductory English writing course, entitled *Writing for a Liberal Education*, which is required for all students at the beginning of the college program at the university. The sample course syllabus is attached in Appendix B. In the spring 2005 semester, the English course was conducted as a regular face-to-face class, but three classes were conducted in the Language Lab. In one of the three classes, students participated in asynchronous discussions during the class time. In the fall 2005 semester, supplemental online activities were used in addition to face-to-face classes. The discussions were conducted for five weeks. The course objectives stated that the purpose of the course was to introduce the procedures and requirements of writing academic and research papers in a liberal university, while also

addressing common problems associated with student writing. Fourteen international students were enrolled in the course in fall 2005.

Interviews with the instructor were conducted in Dr. Ish's office. Dr. Ish had occupied this small office for many years. There was a window and many bookshelves filled with texts that were intermingled with souvenirs from his students and his overseas travels. He sat in a comfortable desk chair at his desk, with a computer station by his right hand.

Interviews with the student informants were conducted in a quiet classroom or in the researcher's office; in both cases, the door remained closed. In the spring 2005 semester, the researcher helped Dr. Ish's students during the first lab session of the class, in which students were introduced to the basic functions of Blackboard. This took place in the Language Lab, a medium-sized classroom with between 35 and 40 computers. The Language Lab is reserved for language courses and contains a projector and a screen in front of the classroom, a headset with a microphone at each station, and a teacher station that controls the monitor or audio of all of the student stations.

Data Collection Procedures

The data were collected through various qualitative data collecting methods, including the mentor's logs of the instructor's training from November 2004 through December 2005, interviews with informants, email correspondence, transcripts of asynchronous discussion forums, such as correspondence between the students themselves and the correspondence between the students and Dr. Ish during the two semesters, student papers, such as their drafts and final papers, and students' informal course feedback.

The mentor's logs included what types of knowledge and skills Dr. Ish acquired, his progress and concerns, and the mentor's reflections throughout the research. The summary of the mentor's logs is attached in Appendix C. Before the spring 2005 semester, the researcher provided training in the relevant forms of technology for the instructor. In order to develop the individual training for him, the researcher interviewed the instructor to obtain information about his desired objectives for the course, the course structure, and the use of technology in the course. The description of the specific technology training and the mentor's reflections were recorded in the mentor's log. The researcher continued to record in her mentor's log during the spring semester, summer break, and fall semester, 2005, and included descriptions of the instructor's integration of and progress in using technology, his reflections, and the mentor's support.

Interviews with the primary informant, the instructor, were conducted on a weekly basis throughout the fall 2005 semester. Thirteen interviews with the instructor were conducted during the fall 2005 semester. The interviews used a semi-structured format. The researcher asked the interviewee several key questions and followed them up with probes (Merriam, 1998). The researcher asked open-ended questions that covered four points in each interview: (a) what technology the instructor used and how it was used in his course, (b) his overall impressions, (c) his positive reactions to using technology, and (d) his negative reactions to using technology, such as his difficulties with learning and using technology.

All interview data were audio-recorded and transcribed into printed text by the researcher and a native-English speaker. Two other research advisers reviewed the

transcripts of the interviews and revised the interview questions or provided feedback to suggest important follow-up questions.

Interviews with student informants were conducted at the end of the fall 2005 semester in either the classroom or the researcher's office while the professor was not present. The interview questions were designed and based on the instructor's perceptions, and they examined students' perceptions of the two key technology components used in the course: Blackboard and the Track Changes function in Microsoft Word. All student interview data were also audio-recorded and transcribed into printed text by the researcher.

Email correspondence during the research was collected. These email messages included the instructor's questions about technology, his concerns about his mentor's advice, etc.

Transcripts of students' threads and the instructor's responses on asynchronous discussion forums within Blackboard were collected. Asynchronous discussion forums were used in March during the spring 2005 semester. Dr. Ish and his students went to the Language Lab and participated in the asynchronous discussions. The mentor was in the Lab to help Dr. Ish when he needed help. The mentor observed how the forums were conducted and processed.

Asynchronous discussion forums were used in October and November during the fall 2005 semester. The researcher observed discussion forums in the asynchronous discussion forums. In the class, the discussion forums were used to provide the prompt questions for face-to-face class discussions. Students discussed the reading they were assigned, *Ishmael* (Quinn, 1995), both online and in class. The researcher retrieved all

threads using the LMS functions. Although the researcher did not attend in-class discussion, interviews with the instructor revealed the relationship between online discussions and in-class discussions, and the instructor's perceptions of each.

Students' papers were collected to substantiate the instructor's perceptions. In order to substantiate the instructor's perceptions toward Track Changes, students' papers that used Track Changes were examined. Track Changes functions were used in November and December 2005. Students submitted a draft of the reflection essay to the instructor first, and the instructor gave students feedback using the Track Changes functions. Referring to the instructor's feedback, students made changes to the essay and re-submitted the revised essay. All drafts of the participating students' papers (n=9) were collected and examined by the researcher.

The students' feedback about the course was collected at the end of spring semester, 2005. Students ranked what activities were most or least helpful throughout the course.

Data collection methods varied from semester to semester depending upon the research design and the instructor's course design. Thus, data collection methods will be described in relation to the spring 2005 and fall 2005 semesters.

In the spring semester, the data were collected in the mentor's logs of the instructor's training, including the mentor's direct participation in one lab session, email correspondence, transcripts of asynchronous discussion forums contributed by students and the instructor, and students' feedback about the course activities.

In the fall semester, in addition to the mentor's logs of the instructor's training, email correspondence, weekly interviews with the instructor, and student interviews (n=5); student course papers were included as data source.

The Role of the Researcher

The researcher was the instructor's technology mentor during this research. The researcher provided individual technology training to the instructor one month prior to the spring semester, 2005. During the spring and fall semesters in 2005, the researcher provided ongoing assistance to the instructor. Although the instructor decided what and how he would use technology, the researcher was also a passive participant in the course as she influenced the instructor's design of the course and the eventual integration of technology through advice and consultation. The researcher was also "participant as an observer" (Merriam 1998, p.101); the instructor and students were aware that the researcher was observing their online discussions.

The researcher observed online discussions but did not participate in any class or online discussions—"phantom participant observation" (A.Valencik, personal communication, March 15, 2006). "Phantom participant observation" refers to the researcher's observation of students' postings on asynchronous discussion forums.

Although, in the fall 2005 semester, the instructor implemented technology and designed the course himself; the researcher helped him if needed. The researcher gave direct advice only when the instructor requested it, and her advice was based on the instructor's specific questions and prompts. Throughout this study, especially when the researcher offered advice, the instructor's ideas and decisions were respected.

Although the researcher was not an active participant during the research, as mentioned above, there was one instance, during a spring 2005 lecture held in the Language Lab, in which the researcher engaged in active, direct participation: during the class's introduction to Blackboard in a language computer lab. In this case, the

researcher was a "complete participant" (Merriam, 1998, p.101). In that session, the

instructor and the researcher introduced students to the basic functions of LMS such as

Blackboard. As a "complete participant" (Merriam, 1998, p.101), data about the

instructor's fears to introduce LMS to students and the students' levels of their

technological skills were identified. The instructor thought that his students would lack

the knowledge and skills necessary to use technology; however, more than half of the

students in class already had LMS account.

Data Analysis

The collected data were analyzed using inductive analysis methods to investigate the

instructor's evolving perceptions of technology and to identify the factors that influenced

the instructor's adoption of technology (Denzin & Lincoln, 2003). The interviews with

the instructor and the student informants were transcribed and coded so that categories

and themes could be determined. The coding process used QSR N6 software (2002) that

supports coding for qualitative research. During the data collection process, ongoing

analysis was conducted throughout the semesters to continuously reflect upon the data.

In this way, the researcher was able to continually update the interview process. Each

week new questions were formulated to use in the subsequent week's interview. These

key questions were important to maintain the focus on answering the research questions.

Also, follow up questions were asked to clarify the instructor's comments and further

illuminate key factors, themes, and categories.

To investigate the instructor's Levels of Use of technology (research question one),

the coding paradigm used was that described by Hall, et.al in their model (Hall et al.,

1975). Thus, the data for question one were analyzed in two intersecting ways: (a) levels

and (b) categories within each level, as specified by Hall et al. (1975). That is, the data for each month was first triangulated by looking across data sources: instructor's interview transcripts, researcher's logs and email correspondence. Second, all of that data were categorized using these seven categories: *knowledge, acquiring information, sharing, assessing, planning, status reporting,* and *performing.* Third, the data of each category was evaluated and assigned the appropriate level: *Level 0: Non use, Level I: Orientation, Level II: Preparation, Level III: Mechanical use, Level IV-A: Routine, Level IV-B: Refinement and Level V: Integration* (Hall et al., 1975). *Figure 1* illustrates data analysis procedures for Question One.
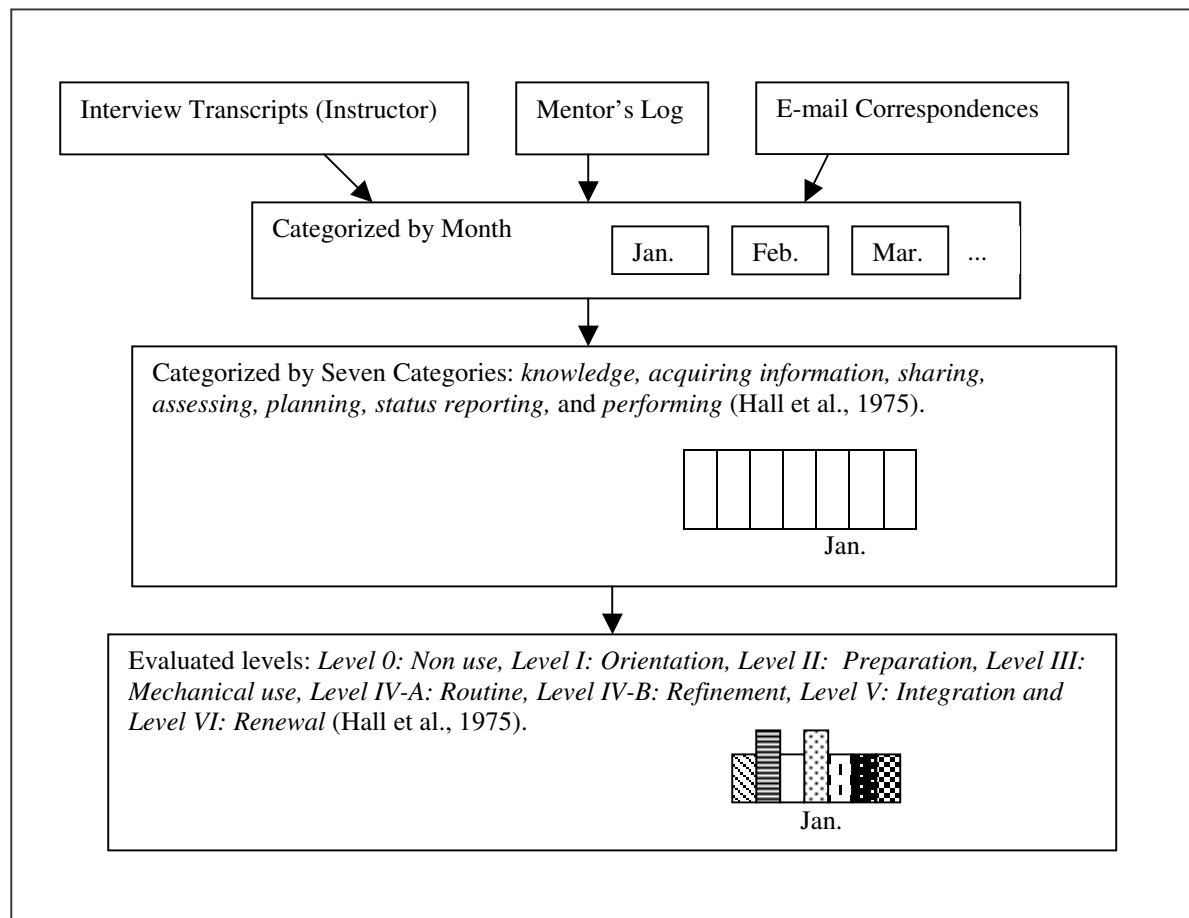

Figure 1. Data Analysis Procedures of Question One

For Questions Two and Three, the analysis process was as follows:

(1) The instructor's interview transcripts, researcher's logs and e-mail correspondence were coded.

(2) Several categories were determined.

(3) The categories were refined.

(4) All data were contrasted and triangulated. Based on the refined categories, students' interview transcripts, asynchronous discussion threads, students' course papers, and students' course feedback in the 2005 spring semester were used to substantiate or refute the key aspects.

(5) The data were interpreted.

To answer Question Two (a), the categories that were related to the instructor's perception were specifically highlighted. Within the categories, connections of each category or key aspect were examined to discover if there was significant change in the instructor's perceptions between the spring 2005 semester and fall 2005 semester. To answer the second part of Question Two (b), the instructor's concerns and uncertainty along with his implementation of new instruction were specifically examined to determine his challenge.

A further layer of analysis was used to determine key factors that affected the technology integration, Question Three. The relationships among categories were re-examined to find patterns across all months, all data sources, and all previous results. For example, the use of the Levels of Use model pointed to the importance of the instructor *Discovering Advantages.* Subsequently, all other data was re-examined to determine whether *Discovering Advantages* was a strong pattern throughout all of the data and

should therefore be considered one of the Key Factors. The instructor's verbatim responses to consistent inquiries about what *he* thought were Key Factors confirmed the findings of the researcher. *Figure 2* illustrates the data analysis procedures of Question Two and Three.
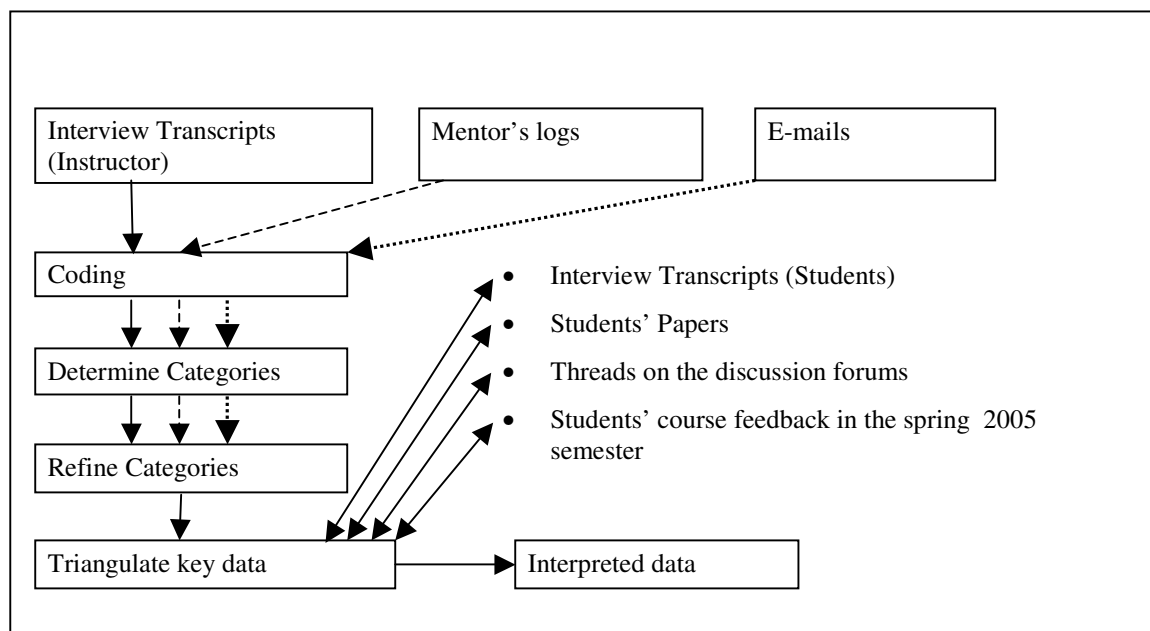
Figure 2. Data Analysis Procedures of Question Two and Three

Researcher's Background

Creswell (2003) states that qualitative research is tightly connected to the researcher's interpretations of the data. The qualitative researcher constantly reflects on the questions and uses his or her personal lens to filter the data. The researcher draws conclusions based on his or her personal lens, based on personal experiences and the theories that informed his or her research question and design. Thus, qualitative research is heavily influenced by the researcher's biographical and personal experience; therefore, addressing the researcher's background information is imperative.

Japanese is the researcher's native language. She received her education through the undergraduate level in Japan. Her majors for her Associate's and Bachelor's degrees were general education and foreign language. She then spent seven years in the United States honing her skills in English and teaching Japanese. She started a Master's program, and specifically studied Language and Culture in the Professional and Liberal Studies Program. After that, she spent two years in the Master's program of Instructional Technology, and focused on how using technology could influence language acquisition. She continued to develop knowledge in this field in the Doctoral Program.

She used Learning Management Software, such as Blackboard, as a graduate student and as an instructor in the Japanese language courses. As a second language speaker, she found benefits in using Blackboard as a student and teacher because it provided another opportunity to express her ideas and opinions besides face-to-face class discussions. She determined that she was able to express her thoughts more clearly and precisely in an online environment.

The researcher also devoted time to discovering the best instruction in her Japanese courses and explored several types of technology along with learning objectives. Although she is still examining the best use of technology in her courses, she has made discoveries about integrating technology each semester. She believes that educators need to continuously seek better instruction.

Because of the nature of the researcher's home culture, the researcher always worked with Dr. Ish in a respectful manner. It was uncomfortable for her to push him to do something. Still, she clearly suggested her ideas or concerns.

Limitations and Biases

Single Subject

This study is a qualitative case study that investigates one instructor in a college level

English course for ESOL students at a mid-sized state university in the Mid-Atlantic.

Restricting the sample size may have limited this study. But in this case, when

considering her methods, the researcher chose to investigate a single subject to provide

more insightful perceptions. By examining an individual subject, the researcher could

narrow the scope of and collect abundant data from the subject; the small size of the

study enabled the researcher to more thoroughly discover, in detail, the issues and factors

related to the research questions. Because of the sample size and the influence of social

variables, the findings of this case may not necessarily apply to other instructors.

Another potential limitation was the researcher's bias, which might have been influenced

by the researcher's interest in having her subject implement instructional technology in

his classroom. Furthermore, because the researcher is not a native English speaker, this

may have influenced the collection and interpretation of the data. Over the course of the

study, the researcher became a close colleague of the instructor; as such she was always

wary that this relationship could affect data interpretation.

Variation of Data Collection Methods

The data collection methods used differed slightly for the spring and fall semesters in

2005. Following the first semester, the researcher reflected on her methodology and the

outcomes of the research so far, and she decided to add more sources of data to

substantiate the instructor's perceptions and to provide comparisons, such as interviewing

students (n=5), holding weekly interviews with their instructor, and examining student

course papers at the end of the fall semester. The focus of this research centered on the

instructor's perceptions and adoption of technology in his classroom. The researcher felt

that by incorporating additional sources of data relevant to the study, her research would

be more comprehensive.

Summary

This research was a qualitative case study of an experienced instructor's perceptions

towards using technology in his English writing course for international students over a

period of two semesters. This one-year case study documented the instructor's in-depth

perceptions, such as his concerns and expectations about technology and his gradual

acceptance of it as he began to implement instructional technology in his courses. The

core informant was an experienced English instructor, who had 30 years of teaching

experience and had rarely used technology prior to the study.

The sub-informants were his students (n=5). In summation, the methods of data

during this case study included "phantom participant observation" of asynchronous

discussion forums and student papers, passive participation and influence on the course

design and structure, and interviews with informants (A.Valencik, personal

communication March 15, 2006). Moreover, data were specifically assiduously collected

by the researcher and recorded in her logs. This data included notes on the progress of the

instructor's technology training, email correspondence, transcripts of students' threads

and their instructor's responses on asynchronous discussion forums.

During the spring semester, the data were collected in the researcher's logs of the

instructor's training, email correspondence, transcriptions of asynchronous discussion

forums contributions by students and the instructor. The students' feedback about the

course was collected at the end of spring semester, 2005. Students ranked what activities were most or least helpful throughout the course.

In the fall semester, the researcher added weekly interviews with the instructor, student interviews (n=5), and student course papers to her collection of data using inductive analysis methods, such as using transcription, coding, and categorization. Following the coding of the data using N6 software, the researcher identified categories and interpreted the data. In addition, the instructor's adoption of technology was evaluated using the LoU chart developed by Hall et al. (1975).

Because this was a single-subject study, findings may not be always applicable to other settings. Furthermore, since the researcher was a technology mentor, her intervention may have influenced the instructor's decisions about adopting technology in his classroom. However, by examining an individual subject, the researcher was better able to collect a rich source of data from the subject and to reveal detailed issues or factors related to the research questions. The dynamics associated with recording an experienced instructor's integration of new technology into an existing English composition course for international students were explored exhaustively.

CHAPTER IV: FINDINGS

Chapter four provides findings of this study by showing key data sources as well as the actual data. This chapter consists of four sections: Question one, Question Two (a), Question Two (b), and Question Three.

This chapter provides findings of each research question. First, Levels of Use (Hall et al., 1975) regarding technology are examined. The instructor's Levels of Use are provided descriptively and with use of a figure. Addressing the second research question, the instructor's evolving perceptions about using technology are revealed. Included the instructor' perceptions are specific challenges with using technology. The multiple data sources that substantiate each of the findings are indicated throughout this chapter. Furthermore, key factors that influence the instructor's decisions are identified in the final portion of this chapter.

The data sources that supported the results were provided in a parenthesis. The following abbreviations were used to indicate the data source: ML for Mentor's logs, IW for interviews with the instructor, SIW for student interviews, EM for E-mails, SAD for students' contributions to asynchronous discussions, IAD for instructor's responses to asynchronous discussions, SP for student papers, and SFD for the student' feedback.

Research Question One

In the first research question, the instructor's Levels of Use (Hall et al., 1975) regarding technology were investigated. The first research question is as follows: How does the instructor's Levels of Use regarding technology change over time in a college composition course for international students?

The instructor's Levels of Use with regard to technology and its adoption were examined based on the *LoU Chart* (Hall et al., 1975). Evaluation of Dr. Ish's adoption of technology was classified into seven categories: knowledge, acquiring information, sharing, assessing, planning, status reporting, and performing. The results have been provided in *Figure 3.*
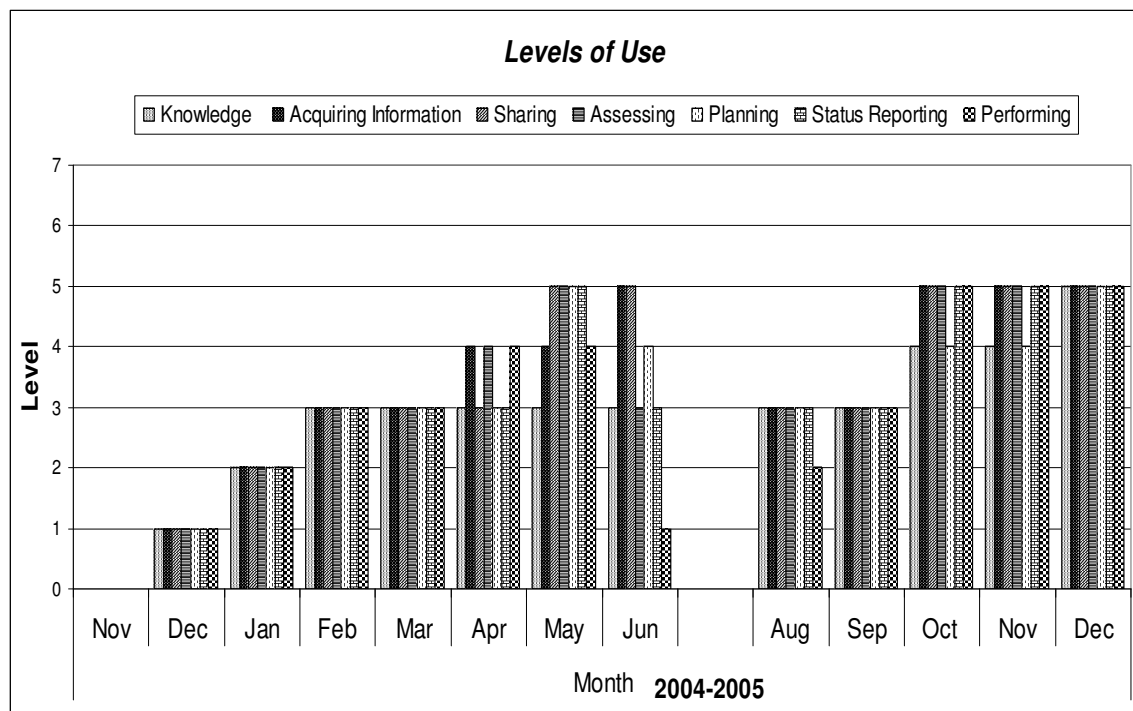
Figure3. The instructor's Level of Use over the Course of the 2004 and 2005 school year.

Scale 7 Level VI: Renewal
Scale 6 Level V: Integration
Scale 5 Level IV-B: Refinement
Scale 4 Level IV-A: Routine
Scale 3 Level III: Mechanical use
Scale 2 Level II: Preparation
Scale 1 Level I: Orientation
Scale 0 Level 0: Non use

The summary of each stage in the LoU chart (Hall et al., 1975) is attached in Appendix D. The seven categories of each level show increasing depth of knowledge and use of technology, as follows:

- *Knowledge*: Cognitive knowledge (not attitudes) about the innovation, such as how to use it and what is the consequence of the innovation.

- *Acquiring information*: Inquiring about the innovation.

- *Sharing*: Discussion of the innovation with others including talking about opinions, plans, resources, and problems.

- *Assessing:* Examination of the potential merits of the innovation. This can be a mental assessment or it can involve actual data collection.

- *Planning:* Development of short -and long term plans for adoption of the innovation.

- *Status reporting:* Expression of current personal position about the use of innovation.

- *Performing:* Carries out the operation of the innovation.

(Hall et al., 1975)

Clearly, Dr. Ish made marked increases in his use of technology over the course of one year. The instructor's Levels of Use increased from Level 0: Non-use to Level IVB: Refinement in seven categories over two semesters. However, these gains were not linear. Rather, his Levels of Use did not always rise, but in some categories remained at the same stage for several months, or at times over the summer, even regressed. The overall pattern of Dr. Ish's Levels of Use may, in itself, be significant. Thus, a closer look at the increases and decreases are in order.

In November and December 2004, prior to the commencement of his teaching responsibilities, Dr. Ish worked with the mentor for individualized training in which his specific course objectives and format were addressed. During this period, Dr. Ish's Levels of Use increased from Level 0: Non-use to Level 2: Preparation (ML1:11/21/04, ML2:11/22/04, ML3:11/27/04, ML4:11/29/04, ML5:12/13/04, ML6: 12/16/04, ML7:12/24/04, ML8: 1/17/05, ML9:1/18/05, and ML10:1/19/05). In February and March of 2005, the Levels of Use remained in Level III: Mechanical Use (ML11:2/1/05, ML12: 2/2/05, ML13:2/3/05, ML14: ML15, ML16: 2/10/05, ML17:2/24/05, ML18:3/30/05, EM2:2/27/05, EM4:2/7/05, EM7:3/24/05, IAD 1: 3/28/05, and SAD1 3/28/05).

However, in April, three categories: acquiring information, assessing, and performing reached Level IV-A: Routine, and the other four categories, *knowledge, sharing, planning, and status reporting*, remained in Level III: Mechanical Use *(*ML19:4/30/05, and EM8:4/17/05). In May, categories of *knowledge* remained in Level III: Mechanical Use. Two categories: *acquiring information and performing*, remained Level IV-A: Routine. The other four categories: *sharing, assessing, planning, and status reporting* reached Level IV-B: Refinement (ML20:5/20/05, ML21:5/30/05, EM3:5/22/05 and EM5:5/10/05*)*.

From the end of May though the beginning of June, the instructor had a two week vacation. At the end of the spring semester, Dr. Ish had become familiar with LMS and Track Changes and mentioned that he would use them for a graduate course during the summer in June and July (ML21:5/30/05, and EM5:5/10/05). However, after the vacation, Dr. Ish lost motivation and he decided not to use them for the course. Since Dr.

Ish knew that the mentor would not be available in July, he may have felt that it would

not be easy to use LMS for a new course by himself (ML22:6/30/05). Therefore, in the

beginning of June, four categories: *assessing, planning, status reporting and performing*

were affected; Dr. Ish's activities in these areas diminished (ML22:6/30/05). However,

during June, he also articulated plans for a better way to use technology, specifically

asynchronous discussions, for the fall semester (EM6:6/9/05). He sent the researcher an

e-mail exchange in which he talked about his experience during the past semester, asked

for advice of the researcher, and expressed his hopes for future use of technology. He

discussed possibilities of what he might do in the coming school year, but in a very

general way. Therefore, the category of *acquiring information* increased one level.

   In July, the instructor decided not to use technology for the summer graduate course,

even though in May he had planned to use technology (ML23: 7/30/05). Since he stated

his plan to use technology for the summer course (EM2:2/27/05 and EM5:5/10/05), and

he had the basic skills to use technology, the mentor thought that he could manage the

summer course. The mentor was out of the country and willing to help him via email.

However, because Dr. Ish decided not to use technology, he did not send any email to the

mentor. So, his Levels of Use were reduced. Since the data were so sparse during this

time of non-communication, the researcher was not able to fully evaluate his Levels of

Use in each category. Thus, *Figure 1* reflects this lack of data.

   In fall 2005, the Levels of Use increased from Level III: Mechanical Use to Level

IVB: Refinement. In August and September, most categories were evaluated as Level

III: Mechanical Use. Performance in August was evaluated as Level II: Preparation,

because Dr. Ish sought information and made a plan for the following fall semester

(ML24:8/19/05, ML25: 8/23/05, ML26:9/1/05, ML27:9/8/05, ML28: 9/15/05,

ML29:9/22/05, ML30:9/29/05   IW1:9/1/05: IW2: 9/8/05, IW3: 9/15/05, IW4: 9/22/05,

and IW5: 9/29/05).

In October and November, most categories were in Level IV-B: Refinement, except

for *knowledge* and *planning*, because Dr. Ish struggled to find a way to increase students'

learning outcomes. Since he was unable to discover clear cognitive effects of using

technology, he was unable to develop long-term plans to use technology to enhance

students' learning (ML31:10/13/05, ML32:10/20/05, ML33:10/27/05 ML34:11/3/05, ML

35:11/10/05, ML36:11/17/05, IW6:10/13/05, IW7:10/20/05, IW8:10/27/05:, IW9:11/3/05,

IW10: 11/10/05, and IW11:11/17/05). In December 2005, at the conclusion of this

yearlong study, all categories were evaluated as *Level IV-B*: Refinement (ML37:12/2/05,

ML38:12/8/05, IW12: 12/2/05, and IW13: 12/8/05). The instructor tried to acquire

information, and discussed modifying the use of asynchronous discussion forums (IW13:

12/8/05).

Summary of Findings from Question One

As *Figure1* indicates, Levels of Use were delineated by category with each category

rated separately for each month of the study. In general, Dr. Ish's adoption of technology

increased when he used technology during the semester. Yet, after the vacation period,

his adoption fell, but then increased again during the fall semester. Each semester formed

a cycle, with the start of the second cycle regressing one level and then progressing to a

higher level; this was true for most categories.

In this study, the instructor was eventually able to reach IV-B: Refinement in all of

the categories. But this was not a linear progression. Dr. Ish was not able to develop

knowledge and *planning* on Level IV-B: Refinement until he actually discovered clear cognitive effects of using technology. He was unable to develop long-term plans for using technology and he continued to consider the option of not using technology in the future because of lingering concerns about the whether technology truly had positive cognitive effects. In the case of Dr. Ish, he needed to gain knowledge inductively and intuitively rather than by being told. He seemed to need to *discover* how technology works for students' thinking and learning before he would consider the future use of technology in his course.

<div align="center">Research Question Two</div>

The second research question provides the findings of Dr. Ish's evolving perceptions. It has two parts (a) the instructor's evolving perception and (b) his challenges. The finings are provided below respectively.

<div align="center">*Research Question Two (a)*</div>

The second research question (a) is as follows: How do Dr. Ish's perceptions about using technology evolve over time? To illustrate the change in Dr. Ish's perceptions, four elements are discussed in this section: (a) emerging resistance, (b) shifting objectives for using technology, (c) reactions toward problems, and (d) mitigating resistance and becoming open-minded to technology. These changes were clearly identified in either the spring and fall semesters or solely within the fall semester. A detailed description is provided for each element.

Emerging Resistance

   Prior to and beginning of spring 2005 semester.

Dr. Ish displayed no resistance to using technology before spring 2005. However, his

lack of resistance was primarily informed by his lack of experience with the innovation as

well as the fact that the instructor was not aware of possible disadvantages and did not

have a negative perception prior to his use. Although Dr. Ish knew that such forms of

technology could be used, he did not have a chance to start using them. After he listened

to the possible uses of the technology, he stated that he would be willing to learn how to

use them (ML1:11/21/04, ML4:11/29/04, ML 6:12/16/05, and EM1:12/16/05).

In December 2004, Dr. Ish started the individual training. He learned about the basic

functions of Blackboard, Track Changes in Microsoft Word, and digital sound files with

the researcher. The mentor also provided handouts to help him operate them easily.

This was Dr. Ish's first time using technology, and the instructor did not express any

specific concerns at that time. Most of his questions were related to technical problems

(ML5:12/16, and EM12/16/05). Furthermore, he did not show resistance to using basic

functions; his interest in using technology was maintained after the individual training

(ML9:1/18/05, and ML10:1/19/05).

   Prior to and beginning of fall 2005 semester.

Dr. Ish was very skeptical about using technology although he knew that it could

provide him with more varied opportunities in his classes (ML24:8/19/05, ML25:8/19/05,

IW1: 9/1/05, and EM3:5/22/05). The first word that he used to describe his relationship

with technology was *skeptical* (IW1:9/1/05). This skepticism was expressed regularly

until later in the semester (IW1:9/1/05, IW2:9/8/05, IW3:9/15/05, IW4: 9/22/05, IW5:

9/29/05, and IW6:10/13/05).

Dr. Ish also expressed concern about time issues in the beginning of the fall semester,

2005. He was afraid that he would spend a lot of time and effort discovering efficient

ways to use technology. He also expressed that it was not easy to discover efficient ways

to use technology. Thus, he seemed to have had concerns that his time and effort would,

in the end, not be productive.

> I am concerned about how much work and time and efforts it takes just to learn . . .
> and experiment with finding technology. Finally, whether it is pedagogically
> helpful or not, or whether it is just a nice little, fun little thing (IW1:9/1/05).

At that time, he was not able to see advantages to using LMS such as Blackboard

including CMC. He thought that collecting hard copies of students' papers was easier

than collecting them using LMS functions (IW2:9/8/05). He obviously sought for

efficiency of his work.

> Sometime, it is a lot easier just to pick up the papers and make notes on them than
> opening up and turning up your computer, getting into the Blackboard and pulling
> out the file, make the comment and saving the file, you know? (IW2:9/8/05)

Since he was skeptical about using technology, specifically LMS, and did not have

confidence that he could use it wisely, he was not positive about using it during the fall

2005 semester (ML24:8/19/05, IW1:9/1/05, and IW2:9/8/05). In addition, Dr. Ish wanted

to use technology to make his work more efficient (ML24:8/19/05, IW1:9/1/05,

EM2:2/27/05). Dr. Ish said, "I guess that my concerns are when I would start working

something, and they [technologies] would not work well. I have to redo something…and

it gets messy. Students get confused" (IW1:9/1/05). Taking time to solve technical

problems would be a waste of time, according to Dr. Ish. Furthermore, if students got

confused, the instructor would need to spend more time to clarify things. Therefore, there would not be any point in using technology. One semester's experience with technology helped him improve his skills, yet Dr. Ish identified some problems he encountered while using the technology and did not see any clear advantages. Therefore, his resistance had emerged.

Results of Emerging Resistance

In spring 2005, because Dr. Ish had no idea how technology would work and how many hours it would take, he did not express any concerns or resistance. Dr. Ish's initial interests about using technology remained after the individual training, because he still expected to see advantages. However, in fall 2005, he expressed strong resistance prior to the semester and during the early part of the semester in the form of several specific concerns. During his first semester trial, Dr. Ish had acquired necessary skills and began to develop an idea about the types of problems technology creates and the ways in which these problems must be addressed, as well as the time and devotion required for addressing them. Therefore, he showed strong skepticism about the advantages to using technology.

Shifting Objectives for Using Technology

Spring 2005.

In spring 2005, Dr. Ish's primary objective for using technology was to introduce his students to technology such as Blackboard, as well as other forms of technology, in order to allow them to gain basic technological knowledge and skills (ML13:2/3/05). Because English 102 is specifically designed to orient students to the process of writing academic papers at the college level, technological knowledge is a necessity.

Fall 2005.

In the first interview in September, Dr. Ish shared that his main objective was to

introduce his students to technology and allow them to gain basic technological

knowledge and skills (ML26:9/1/05, IW1:9/1/05). The instructor said, "Part of what I am

doing is introducing them to technology within the university. Blackboard is a good way

to do it. If on the minimum level, I have done something good for them" (IW1:9/1/05).

However, in December, Dr. Ish mentioned that his objective was also to help students

become better writers. His focus shifted to improving students' learning outcomes

(ML37:12/2/05 and IW12:12/2/05).

> My main objective was always to find uses for technology that helped students
> become better writers, to learn more effectively. My secondary objective was to
> familiarize international students with the technology that they might be using in
> their other classes…and perhaps give them some tools that other students are
> unaware of (e.g., Track Changes). These two objectives remain today. I feel very
> confident that I'm meeting these objectives. I also am aware and have accepted
> the fact that there will be times when I will try some new use and it will not work.
> But that is true of any new approach, activity, or strategy (IW12:12/2/05).

Dr. Ish's perceptional change indicates that although he was not sure whether

technology could influence student learning, he came to believe that technology could

enhance students' writing. The purpose of using technology was no longer to simply use

technology in the end of the fall semester; rather it was to help students be better writers.

Results of Shifting Objectives for Using Technology

The change of objectives clearly indicated that Dr. Ish discovered that using

technology could help his students become better writers. Initially, the purpose of

including technology was to let students explore forms of technology that they could use

in other academic courses. Thus, his intention was simply using common technology in

his course so that students would be able to use such technology in their future courses.

In contrast, in the end of fall semester, Dr. Ish clearly stated that the main purpose of using technology is to enhance students' writing skills. He identified the fact that technology could improve student learning.

Reactions toward Problems

Spring 2005.

When Dr. Ish faced problems, he sought help from the technology aid division or his mentor to clarify whether he made a mistake and to fix the problems. If it was his first time using the technology, he asked for help without any hesitation (ML14:2/7/05, ML17: 2/24/05 and EM4:2/7/2005). Some problems that Dr. Ish faced were not because he did not know how to perform the task, but were hardware problems caused by trying to use his home computer, which did not have the same software and capacity as his office computer. For example, Dr. Ish was able to listen to his own and his students' recordings on his office computer, but he had difficulty listening to them on his home computer. It took several minutes to listen to one file. It seemed to be related to the system and network of the home computer. Furthermore, he recorded his voice in the Language Lab, but he wanted to record his voice on his office and home computers as well. The mentor suggested that he use the sound recorder in Microsoft Windows system, but the instructor wanted to record for more than one-minute, so he needed to install specific sound recording software. He tried to obtain the software from the Lab manager and install it at home, but it did not work well. So, he just came to the lab to record his voice. He was discouraged by these problems (ML18, 3/30/05). He expected to use those sound files at both his office and home computers. Technically, he should be able to

record and listen to the sound files, but he faced unexpected hardware and software

problems.

Fall, 2005.

Dr. Ish shared his feelings about technology when he faced the problems. For

example, Dr. Ish was very angry when he faced technical problems that he was not able

to control, "I've walked into Language Labs where the whole lesson's planned on

whether half the consoles are not working…I'm angry at technology this week" (IW5:

9/29/05). However, the problems like the lab system were a type of problem that he

would not be able to fix. These types of problem could make any instructor frustrated

and discouraged. He spent time to develop the plan for the day, and he expected that all

systems could work well. However, his instruction was not able to be implemented as he

planned, which might not have happened in his traditional instruction.

Dr. Ish's attitude toward the technical problems had also changed. Dr. Ish usually

sought help from the mentor and technology help staff when he faced problems

(ML14:2/7/05, ML17: 2/24/05 and EM4:2/7/2005). However, if he thought that he may

have already previously learned the procedure, he tried to fix the problem by himself

(ML27:9/8/05 and IW2:9/8/05)

> I just would not go to them [technology help division] automatically.
> I actually probably would ask you [mentor] first. I have not felt a need to see to
> go to CIAT [technology help division] yet, mainly because we're not doing a lot
> of complicated stuff yet here. Basically, the stuff that I can figure out if I look it
> carefully (IW2: 9/8/05).

In the ninth interview, Dr. Ish said that he no longer became upset when he faced

technical problems; instead, he just tried to fix the problems (ML34:11/3/05, ML35:

11/10/05: IW9:11/3/05, and IW10:11/10/05). He even mentioned that he solved some

problems by himself. "Well, one of the things I'm finding is when these things go wrong

I don't get as upset. Like when the junk mail problem arose, I solved it myself"

(IW9:11/3/05).

In the tenth interview, Dr. Ish mentioned the same attitudes that he has toward

problems, contrary to the frustration and anger he expressed in the fifth interview.

> I think I told you I'm beginning to feel more helpful and able to problem solve;
> accepting, but also not getting upset. If I can't…well, there are drawbacks to
> everything. I think I now know enough to know that there are always going to be
> problems; some you resolve some you don't. Even if I didn't have a computer,
> there would be the problems. Some you can resolve some you can't; take what
> you can get. You can some benefits you're always going to have deficits no
> matter what (IW10:11/10/05).

Dr. Ish was aware of the nature of technology. Technology may not always work as a

user expects, and some problems are related to hardware or the network, which an

individual user cannot control. Also, since Dr. Ish explored several different types of

problems, he might have acquired abilities to tell the types of problems.

Results of Reactions toward Problems

In the spring semester, Dr. Ish sought help from the mentor and technology staff

without hesitation. He had a little frustration about technical problems; furthermore he

did not show strong anger about technology in the spring.

In the fall semester, initially the instructor was discouraged with technical problems,

and sought help from the technology aid division or his mentor to fix them. Compared to

the spring semester, he was a bit hesitant to ask for help from his mentor because he

knew that he had faced some of the problems before. He did not ask the same questions

again and eventually began to spend time fixing problems on his own.

Mitigating Resistance and Becoming Open-minded to Technology

    Spring 2005.

    As explained before, Dr. Ish did not have any resistance to using technology before spring 2005 (ML1:11/21/04, ML4:11/29/04, ML 6:12/16/05, and EM1:12/16/05), because he did not know the requirements or problems of handling technology.

    However, one hesitation that Dr. Ish exhibited was the way to incorporate asynchronous discussion forums in his course. He initially was hesitant to follow the mentor's advice about using asynchronous discussions, *Discussion Boards*, but then developed a more comfortable way to use them (ML18:3/30/05). However, his way did not work well and he perceived that the discussion forums were not productive (ML18:3/30/05, EM5:5/10/05, SAD 1, and IAD 1). Dr. Ish's perception about asynchronous discussion forums will be discussed in the next question discussing the instructor's challenges.

    Fall 2005.

    In the fall semester, 2005, Dr. Ish showed resistance to use technology in his course (ML24:8/19/05, ML25:8/19/05, ML26: 9/1/05 , ML27:9/8/05, ML28:9/15/05, ML29: 9/22/05, ML30: 9/29/05, ML3110/13/05: IW1:9/1/05, IW2:9/8/05, IW3:9/15/05, IW4: 9/22/05 IW5: 9/29/05, and IW6:10/13/05).   He expressed that technology was overused by many instructors, and they might not have even considered whether technology was useful or not.   "It's overused by many teachers just because it is there without considering whether it is really useful" (IW1:9/1/05). In fact, he pointed out the information delivering method, questioning whether or not putting information in Microsoft PowerPoint slides was appropriate.

> Technology is one of the tools. If it is overused or used inappropriately, it is a waste of your time. I just find some teachers think that Power Point is the only way to have a lesson. You could write on the board. It does not mean it works either, you know. It is just a different way of delivering something. If the lesson requires something other than delivering information, you are caught in the using Power Point mode. You put every thing in PowerPoint (IW3:9/15/05).

Dr. Ish's views were that simply using presentation slides may not enhance students' outcomes. There may be many instructors that use presentation slides without considering learning effectiveness. However, Dr. Ish brought up the examples to imply that his resistance was reasonable, and he did not waste his time. Because the instructor was not able to find the clear advantages of using technology, he had resistance to using it in general.

Since Dr. Ish faced several technical problems every week, and found few advantages to using technology, he mentioned many negative aspects in the first six weeks (ML26:9/1/05 , ML27:9/8/05, ML28:9/15/05, ML29: 9/22/05, ML30: 9/29/05, ML31:10/13/05: IW1:9/1/05, IW2:9/8/05, IW3:9/15/05, IW4:9/22/05, IW5: 9/29/05, and IW6:10/13/05).

> There are times when I think it is not worth it, given what I am trying to do in my class. But, again, it is there, it has to be used. Students are used to using it. In terms of something, it does not work (IW2:9/8/05).

At the same time, he expressed the dilemma that technology could make problems, yet technology should be used because society and its institutions are rapidly becoming saturated with it and students are used to using it. However, he stated that he would not use technology if there would not be any advantages to doing so. (ML27:9/8/05 ML28: 9/15/05, IW2:9/8/05, and IW3:9/15/05).

> Certainly, I would not adopt it if I did not feel that it had possible advantages to it, but I always as you know, consider it and try to anticipate the problematic issues, because it will be, if you do not anticipate them, you may end up not being able

to use the technology. You just do not apply technology to everything. If you do, you do not apply it in the same way. I am very very concerned about problematic issues (IW3:9/15/05).

 As Dr. Ish mentioned in the fourth interview, an experienced instructor spends half his or her life becoming an experienced instructor, and he or she should be very cautious about using new tools. The instructor even said that an instructor should protect himself or herself from the thought that computers can do many cool things.

> I'm uncompromising. I think you have to protect yourself from thinking "Oh wow! There's so many cool things you can do with a computer" You spend half your life planning to get here when you may not be giving the attention to—it's one of those things that nobody talks about, nobody wants to consider, but we may be spending more on technological bells and whistles, and all of us have convinced ourselves that it's better when it's just not. You can read research papers all you want, but using it in your own class is the bottom line. The last discussion we are going to have is going to be about how skeptical I will remain about the use of technology (IW4: 9/22/05).

In the fifth interview, Dr. Ish even realized that he had a lot of resistance to using technology and explained that this resistance was related to its little pedagogical value as well as its unreliability. If technology were more reliable, did not require Dr. Ish to spend a lot of time learning how to use it, and enabled students to learn better, he would not have resistance to using it.

> As you were working on getting this set up, I realized that I have a lot resistance to technology, and the resistance is…one of them is the questions of its pedagogical value for certain things. We've talked about this before. It's the logistics of it…it's the reliability of technology, or the relative unreliability towards possible types of Murphy's Law…It's a broken record right now. I know I keep saying it. It really is issues of reliability, time constraints, and then actual effectiveness (IW5: 9/29/05).

Dr. Ish continued to express his skepticism about using technology, but focused more and more on the issue of time. "Technology is an extra time eater. Just using it, setting it up, and you'll see why I'm so...I'm not angry at it, just cautious; healthy skepticism"

(IW6:10/13/05). Dr. Ish also expressed concern about increased workloads for both

instructors and students as a result of implementing new technologies. Dr. Ish would not

spend time and effort doing something he found no purpose for doing. The instructor

would, though, be willing to make the students work harder if he believed they would

gain an advantage from doing so.

> Workload and effective use in technology…like I said, every week that would be
> the same answer because I think as a teacher you should always be concerned
> about workload with students. I don't hesitate to make them work hard; I just
> don't want them to work hard doing something that has no purpose except for me
> to find out if Blackboard works (laughs) (IW6:10/13/05).

In the seventh interview, Dr. Ish showed a new perspective about using technology

that can facilitate technology. He participated in the workshops about Microsoft Outlook

during the previous week. He learned several new ways to use Outlook, which improved

his skills. He knew the basic ways to use Outlook, but he found easier or faster ways to

do the same things in the workshop. His new idea was that he must continue to learn and

expand his knowledge in order to be able to use the tool skillfully. He realized that he

might not know the better ways of doing it.

> The advantage I see is I must continue to learn how to use the programs. To truly
> understand all the little properties and options because if you don't know how to
> use your tools skillfully then you do a lot of extra work, this adds to the
> frustration of things not working. I'm actually loading myself up with...there's a
> given percentage of frustration in technology, not having technology as frustration
> by adding to it by doing more than I have to or taking three clicks to do what
> I....oh, there's one way I can do one click. I've learned several things like that
> yesterday with Outlook. There are always those little things that you don't learn
> unless someone points it out to you or if you read the manual (IW7:10/20/05).

Before the eighth interview, Dr. Ish started using technology actively. The instructor

set up asynchronous discussions on LMS. The online discussions worked well; the

instructor mentioned positive things about online discussions. The instructor perceived

the high quality of students' discussion and professional attitudes in the discussion

forums (ML33:10/27/05, ML34:11/3/05, ML35:11/10/05, ML38: 12/8/05, IW8:10/27/05, IW9:11/3/05, IW10:11/10/05, IW13:12/8/05 and SAD). The instructor's perceptions about the online discussions will be discussed in his response to the next section, Question Two (b) below.

In the eleventh interview, Dr. Ish expressed that his perceptions about using technology had changed. He articulated that he felt more comfortable seeking better ways of using technology. In addition, he thought about implementing technology in other writing courses. Initially, he did not even want to spend any time or effort finding new ways to use technology and/or learning new programs and applications. Because of his strong skepticism, he might not have really believed that his efforts would pay off.

> More...it takes less effort for me...it's just more natural for me to use it now. I'm sort of more comfortable finding ways to use it or having to try something, whereas when you sit and think about for a few seconds and say no, or not even think about. Whereas now, I'm incorporating it into my business writing class; I've just become a bit more comfortable with it.
> I find, though, that without the former resistance to technology,
> I am much more apt to try new things than before. I also see that I am actively looking for ways to use technology, whereas before I was a bit close-minded, just responding to your or others' suggestions, rather than being creative on my own.
> I think that our discussions and my getting a bit more adept at using the different programs has helped (IW11: 11/17/05).

In the twelfth interview, Dr. Ish's comments indicated that his resistance to using technology was dramatically reduced. He mentioned that he was actively trying to find better ways to use technology. Although he was still cautious about using it, he did not seem to be hesitant about seeking ways to use it.

> I'm actually much more actively seeking ways to use technology. I still spend time thinking about the actual pedagogical value of any use of technology . . . trying to avoid the trap of using it "because it is there" or "it has to be good because it's technology". But I find the resistance to technology has been significantly reduced (IW12:12/2/05)

Results of Mitigating Resistance and Becoming Open-minded to Technology

In this section, Dr. Ish's evolving perception about technology was introduced. In the beginning, the instructor was skeptical about technology. This might have come from his experience in the spring 2005 semester. Since it was his first semester, he must have spent a lot of time in operating each function, although he expected that he would be able to save time by using technology. In addition, he was not sure about student outcomes. He felt that many people use technology because it is available. He questioned whether many instructors who use technology examine the usefulness and effectiveness of it while he doubted the effectiveness on student learning.

There were two events that changed Dr. Ish's skepticism and reduced his resistance. One was attending workshops about Outlook. He knew about the basic functions of Outlook, yet he learned more sophisticated uses in the workshops. He knew about the basic functions in Blackboard, but he thought that there might be more skillful ways to operate each function and better ways to use the Blackboard functions. His change of perspective also came from the use of asynchronous discussion forums, which will be discussed in a later section. In the beginning, he was often angry about technology that did not work as he planned. In the end, he just tried to fix problems and tried to seek better ways for using technology without strong resistance. He became more open-minded to technology.

When Dr. Ish had a strong resistance to technology, he was not receptive to advice. However, once he started seeing unexpected advantages, he was willing to experiment more. Also, when he discovered that it worked, he became more open-minded.

Summary of Findings from Question Two (a)

The data collected for Research Question Two showed that Dr. Ish's evolving perceptions were examined using four themes: (a) emerging resistance, (b) objectives for using technology, (c) reactions toward problems, and (d) mitigating resistance and becoming open-minded to technology.

Dr. Ish initially did not have any specific concerns about using technology because he did not know what he would have to do or what types of problems he would face. Furthermore, he did not believe that technology could actually help student learning although he thought that students should explore the technology because they would use it in other college courses.

Once Dr. Ish started using technology, he identified several concerns and faced technical problems. He identified the time he would spend on technology as a concern, and further, the advantages were still not clear to him. Thus, he showed resistance during the beginning of the second semester. He was angry about technology whenever he faced problems and had to spend extra time to solve those problems. He expected that technology could save time but he had to spend more time and gained extra work as a result. Eventually, he emphasized that he would not use it unless he identified the positive pedagogical effects. In addition, he doubted any cognitive effect because of technology, and he perceived that many instructors wasted their time. He was protective of his traditional instruction that had developed over many years. He emphasized that he should not be attracted by technology that included a lot of sophisticated functions. In other words, his traditional curriculum and instructions should not be destroyed by technology that may not work, despite the multitude of functions it could provide.

Despite initial skepticism, Microsoft Outlook workshop, made Dr. Ish realize that he should keep learning technology skills. Although he was able to operate basic Outlook functions, he discovered other ways to complete the task faster at the workshop that he attended. He realized that he did not know the most skillful ways of using Outlook. Thus, he questioned whether he knew skillful ways to use Blackboard, also. He focused on whether he was skillful enough to use Blackboard without adding more to his workload. He started to think that there are other ways to use Blackboard more quickly that he might not have known yet. The one workshop stimulated him and made him question his technological skills including LMS operation skills.

Furthermore, after he actually discovered that using technology could help student learning, his resistance was dramatically reduced, and he became open-minded to technology. He was more receptive to the mentor's advice. One big perceptional change was that he became aware that using technology could help student learning. In fact, the objectives for using technology shifted from introducing technology to students, to using technology to help students be better writers.

Research Question Two (b)

The question two (b) provides the findings of Dr. Ish's challenges with using technology. The research question is as follows: What are Dr. Ish's challenges with using technology in a college composition course for international students?

This section consists of three sections: (a) finding benefits of using technology, (b) using asynchronous discussion forums, and (c) using Track Changes. Dr. Ish' big challenge was finding benefits in using technology.

Finding Benefits of Using Technology

Dr. Ish found it difficult to find value in using technology in an ESOL writing course. He did not perceive that using technology would fit into his course. Specifically, he wanted to find the ways to use technology that saved time and that was effective.

Dr. Ish perceived that there were many courses that could integrate technology; however, he did not think that technology could be compatible with his course and his teaching style (ML24: 8/19/05, ML 25: 8/23/05, ML26: 9/1/05, ML 27: 9/8/05, ML29:9/22/05, ML31:10/13/05, IW1:9/1/05, IW2:9/8/05, IW4:9/22/05 and IW6:10/13/05).

> For some courses, it's better, for some courses, it's not. We talked about my composition class, it is very hard to find the way to use it effectively and actually save time overall, or do things better overall. That is why we struggle with that (IW1:9/1/05)

Specifically, Dr. Ish wanted to find the best ways to use technology in his course that could save time and promote better learning outcomes. The expectations may have placed him into a more difficult position to see value, because it is hard to see effective outcomes before the changes are actually implemented. Furthermore, he was not able to discover advantages or get tips from other colleagues since Dr. Ish wanted to find the best way to use technology that was compatible to his own course design. In other words, he was less interested in the success stories of other colleagues. Dr. Ish said, "Many of teachers have very different courses. They are doing very different things, and they do not have the same approach to grading and interactions with students as I do" (IW2:9/8/05).

Another aspect that hindered Dr. Ish to discover values was having a protective attitude toward his traditional instruction. He did not want to change his course design or

teaching style (ML27:9/8/05, ML28: 9/15/05, IW2:9/8/05, and IW3:9/15/05). In addition, the instructor believed that technology could work better for other courses that teach concrete knowledge, such as physics, rather than teaching a performance skill like a writing course, because the instructor can give concrete answers for questions. Thus, the computer can grade assignments for the instructors in such courses (ML26: 9/1/05, ML28: 9/15/05, ML29: 9/22/05, IW1: 9/1/05, IW2: 9/8/05 and IW4: 9/22/05). "The computer cannot just do anything for you. They make the process of writing. It is a little different. But, you still have to read the papers, and you still have to comment on them" (IW2:9/8/05).

Since Dr. Ish identified that unlike physics or mathematics, technology cannot grade assignments automatically, he was not positive about the advantages to using technology.

Without finding advantages, using technology was simply extra work to him. He said, "It's [teaching writing] labor intensive, but technology adds more labor to it" (IW6:10/13/05). In addition, he emphasized that he was very busy reading students' papers; thus, he would not have time for exploring creative ways of using technology. "I just don't have time for it. I thought people who have time for it are people who don't teach writing. There are exceptions, of course" (IW4: 9/22/05). Dr. Ish shared a story about his friend who teaches Physics in another college. He thought that those types of courses would be compatible to integrate technology.

> She's in physics so she's giving technical 'ABC', '1234' kinds of questions. I can't do that in writing. One of the things about teaching writing is you're reading so many papers so often. It's constant, especially if you have several courses (IW4: 9/22/05).

Dr. Ish's friend spent a lot of time managing an online course for six students. He imagined how much time he would need for about 20 students and was very afraid that he

may not have a life outside of his class because of the number of students (ML20:9/29/05, and IW5: 9/29/05).

> For her first class she had six students and she said, I worked harder for those six students than I've worked for any other class. Let's say I've got twenty writing students. She said, this is a lot of work. She said, I love it, but it drives me crazy. I'm up all hours of the night trying to fix things. I don't want to do that. I don't want to be dealing with technology sixty percent of my time when I could be actually dealing with making better comments on students' papers, and taking more time with them, thinking through my lesson plans a little better. It's kind of like she doesn't have a life. This keeps her busy. I'm not enamored with technology, and I don't use it as an escape, as a keep-me-busy thing (IW5: 9/29/05).

Even though he spent a lot of time online, it would not necessarily guarantee that students would learn more or better. Dr. Ish realized that many an instructor spends some hours using technology, but such a heavy workload was not expected or desired. However, Dr. Ish emphasized that writing teachers have a heavy workload without technology. This statement implied that he would not have time to use technology because he already had a heavy workload. Moreover, explaining how to use technology to ESOL students is even more complicated than teaching it to native speakers. They were the reasons that he did not believe that integrating technology was compatible with his course. In other words, there was little value to using technology in a writing course for international students.

Dr. Ish knew that he could use multiple choice tests or true-false quizzes in his courses, and the computer could grade them for him; however, he would not believe that students could become better writers by giving them those type of quizzes (ML31:10/13/05, ML29: 10/13/05, IW4: 9/22/05 and IW6:10/13/05).

> I wish I had a course that had facts that students needed to memorize and learn and read. I could do multiple-choice tests, true-false, some of the books, now, actually provide you with the tests and you can put them on your Blackboard.

They take the test and you grade it. Of course you don't know who's taking the test. Nobody cares. I really wish I could be that kind of teacher; everything could be graded automatically, my life would be so realized. I don't think I want to teach that way, so I end up teaching writing, and writing is not an easy blend for technology (IW6:10/13/05).

Dr. Ish mentioned that instructors, who believe quizzes work, could use technology easily. They can see the advantages more clearly (ML26: 9/1/05, ML29:9/22/05, IW1:9/1/05, and IW4:9/22/05). In other words, technology could reduce the instructor's workload and help student outcomes. In contrast, he did not believe that students could become better writers by taking quizzes. Thus, he thought it was very difficult for him to find ways to use technology in his class (ML 31:10/13/05 and IW6:10/13/05).

Dr. Ish emphasized the incompatibility of his course with technology, comparing the number of students and the different audience from his friend's physics course (ML30: 9/29/05, ML31:10/13/05 IW5:9/29/05, and IW6:10/13/05). In the ESOL English composition course, about 15 students are enrolled. Explaining the procedures of use of technology for them was a particular challenge. Thus, using technology would not be easy for his courses.

> An explanation to a foreign student is so much more complicated than going to an American. Workload is fundamental. Any teacher who teaches writing to ESOL students—even when I'm working with my assistant we're working a lot with technology with digital recording, learning how to use it, helping them learn how to use it. How much time am I putting into to and how much benefit am I getting out of it? That's hard to measure. It has to be kind of what I call a *gut feeling* for writing (IW5: 9/29/05).

Results of Finding Benefits of Using Technology

Dr. Ish believed that technology would not be compatible to his course content nor his teaching style. The first reason was because his idea of using technology was just giving drill and practice types of quizzes, nothing more. Since he did not believe that

those types of exercises could help students become better writers, he did not think that technology could be usable in his course.

The second reason was that he wanted to discover a way of using technology, which could maintain his original course design and save time, while helping students learn better. Thus, he was not interested in other instructors' success stories. In addition, since he wanted to add technology into his traditional course design, he faced the difficulty of integrating technology without changing his traditional course design. Finally, this approach made him find the value of using technology.

The third reason was that Dr. Ish thought his students were not an appropriate audience for using technology, because explaining technology to ESOL students would be complicated. And with a class size of 15 students, this was an overwhelming task for Dr. Ish to handle. Therefore, these aspects held him back from finding value in technology. Since these aspects were intertwined, finding value was challenging for him.

Using Asynchronous Discussion Forums

Using asynchronous discussions was one of the big challenges Dr. Ish faced in both spring and fall 2005. Asynchronous discussions were the components that the researcher wanted Dr. Ish to use the most for the writing class to produce better reading comprehension by having discussions outside of class as well as to prompt students to show their insights in writing.

  Concerns and Unproductive Outcomes in Spring 2005.

The first use of asynchronous discussion forums in the spring semester of 2005 was conducted in the Language Lab during class hours. All students came to the language lab and participated in the discussions of their reading, *Ishmael* (Quinn, 1993). Dr. Ish also

moderated the discussion similarly to his moderation of face-to-face discussions. Dr. Ish wanted to maintain his course design as much as he could; therefore, the instructor tried to use the asynchronous Discussion Board during class time as though it was a synchronous format. In other words, asynchronous discussion forums in the Language Lab replaced face-to-face class discussions. At that point, Dr. Ish was not able to think about using the asynchronous discussion forums out of his presence. He was overwhelmed just using LMS for the first time. In addition, the instructor had concerns about student participation at home, particularly whether or not students pay attention to the discussions. Since it was his first use, the researcher respected Dr. Ish's plan although she had concerns about this adaptation (ML18:3/30/05).

Uncontrollable and unproductive discussions.

In the first use of the asynchronous discussion forums, about 150 threads were posted during the class sessions. The big problem was that the discussions went in many directions. It was very hard to track to whom students were responding (ML18:3/30/05). Specifically, classmates posted comments while they were writing or while Dr. Ish was writing. Although it was an asynchronous discussion forum, the discussions were conducted in a synchronous discussion manner; therefore, the number of participants, 15 students, was a rather large group to participate in synchronous discussions. Thus, Dr. Ish expressed that he could not control the discussion as well as he could face-to-face. He thought that the face-to-face discussions were much more productive and that he was able to control discussion topics more easily (ML18:3/30/05, and SFS). Because of the unproductive asynchronous discussion use, in the end of the first semester, Dr.Ish asked for advice from the researcher, "I'd very much like to chat with you about BB

[Blackboard]. It was a helpful tool this semester, and I'd like to discuss ways to make the Discussion Boards a bit more productive/organized in the fall" (EM5: 5/10/05).

The researcher gave some advice about how to use asynchronous discussion forums. Considering his workload concerns, the researcher gave the instructor advice about students using Discussion Boards to make up for face-to-face class discussion. Some ESOL students have little confidence speaking in class or may need to have time before they speak; however, Dr. Ish felt that the make-up opportunity might provide less reason for the students to speak in the face-to-face discussions.

> One of my objectives is to help students develop their ability to participate in a class discussion. If they feel that they can *make up* for the discussion in class with a written input, they may never learn how to speak in a discussion (EM6:5/22/05).

Therefore, this caused him more concern. Other advice that the researcher gave was to allocate an online discussion grade in addition to a face-to-face discussion grade; further requiring students to post wrap up questions or leading questions before the face-to-face discussions. Dr. Ish seemed to be willing to consider the researcher's advice (EM7: 6/9/05).

> I would be glad to consider using the Discussion Board for a way for students to add to the discussion grade, perhaps in the beginning discussions.
> Also, the idea of posting some wrap up ideas or questions sounds good. Let's discuss this in August. Even if it means a bit more work, it would be worth it to see if it helps students learn (EM7: 6/9/05).

Instructor's Evolving Perception of Using Asynchronous Discussions in Fall 2005

Dr. Ish was not sure how he could use asynchronous discussions. He also emphasized that he wanted to use them effectively this time, yet he stated that it could take time to discover the most effective uses (IW1:9/1/05). His major concerns in fall 2005 related to a lack of control. He was not sure whether students could pay attention to online

discussions when they were unsupervised at home. He also worried about whether

adding online discussions were too much work for students. After the first asynchronous

discussion, he was disappointed with the results; however, while continuing to re-

evaluate, he gradually discovered advantages and altered his views. He also was very

concerned about the increased workload for himself.

Concerns about using asynchronous discussions.

The instructor expressed the same concerns in the spring semester when he was

planning how to use the asynchronous discussion forums. His main concern was that he

was not able to tell whether or not the students were paying attention to the discussions.

For instance, students might be watching TV simultaneously. In class, the instructor is

able to identify how students are doing and can engage them if they are not paying

attention (ML28: 9/15/05, and IW3:9/15/05).

> In my experience, computers do not make eye contact, computers cannot tell
> whether students are paying attention while they are discussing something. If you
> are on a Discussion Board, everybody is at home, and they can be watching TV
> and then chip in with, "I think so too." If they are in my classroom, I can look at
> them yawning, looking out the windows. I can engage them…. I just do not
> believe in the information transfer process (IW3:9/15/05).

Dr. Ish described another concern about using CMC such as e-mail and the

asynchronous discussion forums. Since these tools are open-ended, people have to keep

checking them. The instructor worked for about 30 years without technology, so the

open-ended communication tool requiring him to access the discussion forums or e-mail

account regularly only creates extra work (ML30:9/29/05, ML31:10/13/05, IW5:9/29/05,

and IW6:10/13/05).

> The problem with those nice little gimmicks...the problem with e-mail and the
> problem with Discussion Boards—open-ended like that—you've got to keep
> checking them. It used to be when the professor left on Friday you didn't hear

from the student until Monday. Now, if you don't answer their Friday night e-mail by Monday saying: Did you get my e-mail? What's wrong with you? They just assume . . . (IW5:9/29/05).

Instructor's disappointment with the first discussion in fall.

In the first discussion, only one student posted and did so anonymously in the fall semester. Dr. Ish thought that he had set up asynchronous discussions to prevent anonymous contribution (ML31:10/13/05, IW6: 10/13/05, and SAD2). He believed that shyness made the student choose to use anonymous threads. Also, Dr. Ish thought that many students did not have time to participate in the online discussion.

> The reality is that students don't have the time. They have the time to play computer games. They don't have the mental space and the commitment to go and ...let's say you provide links on your web page for all these cool things. These students never get your web page let alone click on all the links. If they're not "fun" links they're probably not going to do it—my impression anyways (IW6:10/13/05).

However, since it was the first online discussion, he also questioned why students did not participate in the asynchronous discussion forums. "Students are so shy and confused because it's a hard book to read, and they don't even know what question to ask" (IW6:10/13/05). He also thought that students were shy and confused about the book, which was very difficult. Furthermore, Dr. Ish shared some thoughts about the students' characteristics, "They seem to be tense people. They're very insecure people. Even some of the better writers are very insecure" (IW6:10/13/05).

Dr. Ish's perception toward the students might have been right, yet, the mentor recommended that he should set up the site so as not to allow anonymous threads and send a reminder e-mail including points that they could earn by participating in online discussions. Even though he mentioned asynchronous discussions in class, some students could forget to access the Blackboard site (ML33:10/27/05).

Resistance to opening up the next asynchronous discussions.

When the researcher asked if Dr. Ish would have a plan to open the next asynchronous discussion forum, the instructor again expressed concerns about time for both his students and himself based on the experience in the spring semester 2005. Specifically, Dr. Ish expressed concern about the pressure to read and respond to all threads, which would require him to spend more than an hour browsing through the asynchronous discussion forums. He said, "I was thinking of just having one of our discussions on Discussion Board...it's too much work. It takes too much time. To read and then respond takes so much time. They may actually not respond" (IW6:10/13/05).

Dr. Ish also explained more challenges of using asynchronous discussions with his perspective of his role as a good teacher. "The purpose of the discussions is to clarify, and if one of the students asks a question and the other students answers it wrong. I've got to read everything to find out what's going on. It's not my idea of a discussion" (IW6:10/13/05).

In addition, Dr. Ish knew that he should take more time to grade their threads. When Dr. Ish facilitates face-to-face discussions, he can leave the classroom with their discussion grades. Furthermore, the face-to-face discussions allowed him to clarify the reading comprehension more inclusively while grading each student's comments (ML31:10/13/05 and IW6:10/13/05). Although the instructor had concerns about not receiving a lot of student threads in asynchronous discussion forums, while looking back to the asynchronous discussion forums from the spring semester, he expressed the pressure to read all threads. Furthermore, Dr. Ish expressed how face-to-face discussions were more appropriate and efficient (ML31:10/13/05 and IW6:10/13/05).

The thing is one hour of discussion—right there I can clarify. When I walk out of a classroom I can give them a grade immediately, whereas Blackboard is absolutely useless when it comes to those discussions in terms of workload, it's outrageous. You have 15-20 people saying, and then answering each other. Then one person has to read them all (IW6:10/13/05).

In addition, Dr. Ish shared the frustration without finding clear effectiveness in the asynchronous discussions, "How effective it really is compared to class discussion? Unless someone can prove to me that it's worth the effort and worth all the extra time" (IW6:10/13/05).

The number of students' threads overwhelmed the instructor in the spring semester of 2005 because he felt that he should respond to all of them (ML31:10/13/05 and IW6:10/13/05). The researcher asked why he felt that he should respond to all of them. Although the researcher believed that Dr. Ish should participate in the online discussions, it would not be necessary to reply to every single thread, but to have a systematic way of responding to some or at least a sample of them. Dr. Ish responded to the researcher's advice.

To read all those little...and then to decide which ones to respond to and how to respond, and if I respond, somebody responds to that. The thread after threads, I think *oh*, or sub-threads. I found myself just absolutely overwhelmed, and I never felt like it was pedagogically very helpful (IW6:10/13/05).

Finding advantages of using asynchronous discussions.

The second asynchronous discussions in fall impressed Dr. Ish and changed his perceptions dramatically. He thought that a few students asked simple questions; however, the instructor noticed that many of the questions were very insightful and students participated in the online discussions in a sophisticated manner. Dr. Ish was able to observe that students were thinking deeply. Dr. Ish finally found positive aspects of using asynchronous discussions, which made him surprised. Students exhibited

professional manners and they clearly spent time to develop their ideas (ML33:10/27/05,

ML34:11/3/05: ML35:11/10/05, IW8:10/27/05, IW9:11/3/05 IW10:11/10/05, and SAD

3).

> I thought a few of them would ask questions, and a couple of them did ask questions that were very insightful questions. The responses were very professional, very mature. I was impressed. And one, it shows me the students who really care; it shows me the ones who spend some time reading and thinking about it… (IW8:10/27/05).

> It was a most engaged, professional, serious Discussion Board. I was absolutely amazed. I was amazed at the quality of almost every posting (IW9:11/3/05).

Dr. Ish also identified an interesting perspective that he had never discussed in face-

to-face class discussions. He confirmed that the students' learning outcomes were better,

and that the asynchronous discussions were really working this semester (ML34:11/3/05

and IW9:11/3/05).

> Discussion Board is working well. Discussion Board has helped me discover which students are motivated, and discover some of their interesting perspective that doesn't come out in our [class] discussion because they are shy. That is really working well this semester (IW9:11/3/05).

Dr. Ish recognized that students were more comfortable and confident to state their

opinions in asynchronous discussion forums. Furthermore, he noticed that students

expressed more creative ideas in the forums (ML35:11/10/05, IW10:11/10/05, and

SAD2).

> I have a feeling Discussion Board enabled them to assert themselves to see that they had something to say. What I noticed with discussion is that when people feel comfortable and confident, and they're not afraid of being right or wrong that they are much more creative and much more assertive in the way they deliver things (IW10:11/10/05).

Dr. Ish realized that quiet students, who barely speak or have a heavy accent in the

classroom, stated their ideas on the Discussion Boards. He noticed that their ideas were

more clearly expressed in online board forums (ML35:11/10/05, and IW10:11/10/05).

He expressed, "It was interesting that some of the quieter people actually asserted

themselves on Discussion Board, and they sound very intelligent on the Discussion Board.

In class they hardly speak, and if they do they have a heavy accent or talk . . ."

(IW10:11/10/05). A sample of students' online contributions is provided in Appendix E.

Student's initiative.

Dr. Ish was supposed to open up the new discussion forum, but he did not set it up in

advance. Even though Dr. Ish did not open the new forum, students started discussions

by themselves (SAD3). Dr. Ish also liked students' initiative and leadership in online

discussions (ML34:11/3/05, ML35:11/3/05, IW9:11/3/05, and IW10:11/10/05).

> I forgot to start a new thread for each reading section, but the cool thing was the
> smarter students just kept going. I think it helps me discover just how bright
> some of my students are, that might not have come out as obviously if we hadn't
> done the discussion part. They take initiative and they are serious (IW9:11/3/05).

> There were some students who exhibited some leadership qualities. They're
> deciding I'm going to contribute and he's confused, he didn't do it, but I'm going
> to do it. I like that. I like initiative and I like to encourage it (IW10:11/10/05).

Finding time.

Although the instructor was very concerned about his workload initially

(ML31:10/13/05 and IW6:10/13/05), at this new stage of technology integration, he

found time to read students' responses (ML34: 11/3/05 and IW9:11/0305). In other

words, the students' questions were very impressive and interesting to read, and the

instructor was drawn to read them. He did not feel so much pressure to read and respond

to all of them, but his actions of reading and responding were done energetically and

enthusiastically (ML34:11/3/05, IW9:11/0305, and IAD3).

I think just as I started doing Discussion Board I find I'm responding more—part of it is because I have more time now—I'm responding more and more energetically and enthusiastically because they really are saying things that stimulate my response. The whole idea of this book and the discussion and the journals is to get them to write about things they are really thinking (IW9:11/3/05).

I don't feel like I have to answer everybody, but I put in things here and there (IW9:11/3/05).

Face-to-face class discussions.

Dr. Ish recognized several new phenomena about face-to-face discussions in conjunction with online discussions. In the past, he covered certain points about the book *Ishmael* in face-to-face class discussions. He identified that having online discussions before in-person class discussions were superior to ones without online discussions (ML34:11/3/05, IW9:11/3/05 and SAD3). Because of preliminary online discussions that he implemented as a part of this study, the face-to-face class discussions explored more points. Dr. Ish was surprised at the quantity of the material covered. Secondly, Dr. Ish found that he did not need to guide discussions, rather discussions naturally went well in different directions (ML35: 11/10/05, IW10:11/10/05 and SAD3). Students expressed greater insights. Furthermore, Dr. Ish noticed a difference between face-to-face discussions and asynchronous discussions. He recognized that the online discussions made class discussions sharper and tighter. He assumed that asynchronous discussion activities stimulated students to think and read the text in greater depth (ML35:11/10/05, IW10:11/10/05, and SAD3).

I think the Discussion Board actually made the discussion sharper, tighter. It helped the students see that in order to sit down and write something before the discussion, I think it makes them really think about things. At least I know the ones who were on the Discussion Board had read it. I think it gives them more of a stimulus that they have to read it (IW10:11/10/05).

Dr. Ish shared how preliminary discussions were incorporated into students' journals. One of the students, Cary, had furthered her insights into the success of the online discussions in the journals (M34:11/3/05, IW9:11/3/05 and SP: Cary, Journal 2).

The nice thing is one student was writing in her journal today and she said, *I mentioned this on* Discussion Board*, but I didn't get a good answer so let me try again.* So then she restated [her question]… (IW9:11/3/05).

Dr. Ish also realized that giving students an opportunity to discuss reading repeatedly was beneficial in developing their ideas further. Thus, dual formats, online discussions and face-to-face class discussion, were perceived by Dr. Ish to be very helpful to ESOL students.

Pedagogical values of using asynchronous discussions.

Dr. Ish also recognized the values of pedagogical technique to using asynchronous discussions. Because online discussions take place ahead of class discussions, students needed to read the assigned section of the book and think about it before. In contrast, without asynchronous discussions, students tended to wait to read until the last minute (ML34:11/3/05, and IW9:11/3/05).

I think because of the Discussion Board they are actually spending more time and not waiting until the last minute to read, and that's been a wonderful pedagogical technique to get them to read it, think about it enough to write something, and then when they come to class it's their third time on it. We all know the difference that makes when you mull things over several times, and if you try to explain it, you do a better job (IW9:11/3/05).

The instructor noticed that asynchronous discussions were stimulating students to think more and naturally led hem to comment on the ideas of their peers. Students were motivated by classmates' threads, which created a rich group dynamic. This successful experience completely changed the instructor's views on technology (ML34:11/3/05, IW9:11/3/05, SAD3, SIW: Denise and SIW: Elise).

That's a better average. Some of them wrote answers to others. I think with Discussion Board you always want to know what the competition is saying in a way. I think there's a curiosity factor. And the cool thing is the quality is good enough, and I think the students respond to it automatically. They're thoughtful questions, and if I were a student I would say 'if I write in my journal I might be able to use some of that stuff, or stimulate some thought'. You know that when one student writes something a little bit thoughtful and a little bit longer, then the others just automatically pick up that….it's an interesting dynamic (IW9:11/3/05).

Dr. Ish realized that online discussions maximized students' thinking process because

he was able to see the insightful questions and responses they gave. He expressed that

their interactions were preliminary journals (ML35:11/10/05, IW10:11/10/05, and SAD3).

I'm recognizing their involvement, their thinking process, and their ability to write, too, because the Discussion Board is actually a writing process. So, in a sense of looking at their insightful questions and their good answers I see people who are thinking, and that's what I want them to do. It's like their journals; it's a preliminary to their journal, but it gives me a good impression (IW10:11/10/05).

Finally, Dr. Ish recognized that online discussions could employ real communication,

which was sometimes lacking in the regular classroom. He realized that multiple

interactions and a variety of writing were important (11/10/05, and IW10:11/10/05).

If you think about it, Discussion Board writing is actually really *communication*; someone says something, you respond. That's something that is often times lacking in a course—this real communication. It's usually write something for the teacher, the teacher gives you a grade, and you cry yourself to sleep, and then you do another paper and you get a grade. It creates a little variety in the types of writing they do. It also gets them in gear for their journals (IW10:11/10/05).

Dr. Ish shared that he found what he was looking for in asynchronous discussions.

Although he had various concerns, they were no longer an issue after he found values or

advantages (ML38:12/8/05, and IW13:12/8/05).

I think that was one of the more exciting one, and even the pre-discussion chats on Blackboard. I thought" They really worked well. They gave me what I was looking for. It gave students a chance to show me their involvement, their thought process, and how well they prepared. Maybe that's what's changed my view more than anything, that there are results (IW13:12/8/05).

Students' Perceptions toward Asynchronous Discussions

Based on the results of ongoing analysis of the data in the mentor's logs, interview transcripts, and e-mail correspondence, the following aspects were examined using the students' interviews to substantiate or refute the instructor's perception: (a) students' nervousness, (b) students' workload, (c) students' comfort level, (d) stimulus of thinking process, and (e) students' initiative.

Dr. Ish perceived that students would be nervous or shy when they participate in asynchronous discussions (IW6:10/13/05). ESOL students are especially affected by their shyness or nervousness in terms of participation. Four students stated that they were not nervous when they participated in asynchronous discussions (SIW: Amy, SIW: Beth, SIW: Cary, and SIW: Elise). Denise, however, shared that she was nervous specifically in the first online discussion (SIW: Denise).

Dr. Ish also had concerns about students' workload: Adding asynchronous discussions could be too much work for the students, he thought, because both the instructor and the students have to access them regularly (IW6:10/13/05). Thus, Dr. Ish also assumed that some students did not participate in the online discussion because they did not have sufficient time (IW6:10/13/05). The data from the students confirmed that some students did not have time to participate in asynchronous discussion forums (SIW: Cary and SIW: Beth). Beth had a hard time handling all the assignments in her first semester of college in the United States, so she did not have time to complete them (SIW: Beth). Cary also stated that she did not have time because of her heavy homework load (SIW: Cary), thus confirming Dr. Ish's assumption.

The data of students' interviews revealed their situations or reasons for their lack of time. The lack of time seemed to be related to students' learning experience in college in the United States. Two students, Amy and Beth, who had never used asynchronous discussions before, did not participate in asynchronous discussions (SAD 2 and SAD 3). For both of them, Dr. Ish's course was one of the courses in their first semester in the United States (SIW: Amy and SIW: Beth). Since Amy did not have access to a computer at home, she was not able to access the Blackboard site from off-campus (SIW: Amy).

In addition, Amy and Cary mentioned another reason why they were not active in participating in asynchronous discussion forums. Because the asynchronous discussion activity was only worth two points, they thought that they could easily earn these points in the face-to-face discussions or on other assignments (SIW: Amy and SIW Cary). They were being strategic about their course grade. Because Dr. Ish was not sure about the effectiveness of asynchronous discussions, he did not allocate many points for the online activities. Students were able to earn a total of six points in each discussion segment, but designated only two points for asynchronous discussions and four points for the face-to-face class discussions (IW7:10/20/05).

On the other hand, Denise, who did not have the confidence to speak in class, expressed the advantages of using asynchronous discussion forums. Since she was more confident writing than speaking, she liked using asynchronous discussions (SIW: Denise). The data from Denise confirmed Dr. Ish's later perception that students were more comfortable and confident stating their opinions in online discussions (ML35:11/10/05, IW10:11/10/05, and SAD2). Furthermore, Denise's comment confirmed the instructor's view that asynchronous discussion activities helped students to think more. In addition,

she stated that when she read classmates' opinions, she felt that she wanted to say her ideas more. She liked the extended class hours using the asynchronous discussions. In the latter part of the course, online discussions were not used. Thus, she said that it was very hard because she needed to earn all points in the class discussions and she did not feel comfortable speaking up in class (SIW: Denise).

Elise also stated that asynchronous discussions help students to think before they participate in face-to face class discussions. As a result, they have something to say when they come to class (SIW: Elise).

Initially Dr. Ish shared his concerns that he would not be able to control online discussions (ML18:3/30/05, and SFS). However, later, he liked students' initiative (ML34:11/3/05, ML35:11/3/05, IW9:11/3/05, and IW10:11/10/05). Denise and Elise said that they liked the fact that the students were able to control the discussions (SIW: Denise, and SIW: Elise), but Elise stated that the instructor could have led the discussions more or provided more guidance (SIW: Elise).

Results of Using Asynchronous Discussions

Dr. Ish's challenges with using technology were finding the best ways to use asynchronous discussion forums and changing his traditional course design and format. He had to overcome his concerns about implementing new instruction by changing the original course design and creating a new learning environment. Clearly, the unsuccessful experience during one semester created resistance. In the spring semester, since it was the instructor' first semester using Blackboard, he needed to spend a lot of time managing it. Although the mentor gave suggestions for several ways of improving technology's effectiveness based on her research of relevant literature, the instructor was

not ready to try them. In other words, Dr. Ish had developed and designed his course for

about many years, and he did not want to change it. However, in fall 2005, although the

instructor still expressed resistance, he was finally able to see value in using

asynchronous discussions in his course after he found the advice from the mentor

reasonable.

Dr. Ish was able to see students' thinking processes. He perceived that the

asynchronous discussion questions stimulated students to think and read more.

Furthermore, he realized that some of the quiet students in class made some very good

points on asynchronous discussions. Dr. Ish also liked the students' initiative in the

asynchronous discussion forums. Some students encouraged other students to discuss the

topics. Thus, the social context of learning enhanced the cognitive processes of all

involved. In addition, face-to-face class discussions went very well. Even though Dr. Ish

did not need to control discussions, face-to-face class discussions covered various points

and he noticed the discussions were sharper. He finally discovered values of having

preliminary online discussions before the face-to-face discussions and the students'

outcomes were better.

His workload concerns were not an issue after he realized that he enjoyed reading

students' threads. In addition, his concern about students' performance at home was not

an issue at all after he recognized that they professionally participated in asynchronous

discussion forums. Using asynchronous discussions was a challenge for Dr. Ish to

overcome, but he was able to alleviate his concerns while at the same time implementing

new instruction.

Using Track Changes

There was one type of technology toward which Dr. Ish did not show resistance. Although using Track Changes was not one of his challenges, it is presented here in order to contrast it to Dr. Ish's perceptions of asynchronous discussions. Dr. Ish's perceptions of both forms of technology will be provided in this section.

The instructor's feelings about Track Changes were totally different from the asynchronous discussion forums. Although he had skepticism about asynchronous discussions, he had made a clear decision that he wanted to use the Track Changes functions. The instructor identified advantages of using Track Changes in spring 2005. He was sure that his time and efforts would pay off (ML26: 9/1/05 ML27: 9/8/05: ML31:10/13/05, IW1: 9/1/05, IW2:9/8/05 and IW6:10/13/05). Dr. Ish said, "It is very clear that it accomplished what I want. I wanted to use whatever efforts necessary to learn how to do it. Teach my students, have them do it. It actually pays off" (IW1:9/1/05). Since the instructor was happy about the Track Changes functions when he used them in spring 2005, the instructor wanted to use them more in fall 2005 (SFS, ML26: 9/1/05 and IW1:9/1/05).

Dr. Ish stated various concerns and expressed that he was uncertain about the outcomes of asynchronous discussions; however, he was certain that Track Changes would work for both him and his students.

> That saves, that is something that helps me and helps students…Even though it is problematic, I am willing to work with the problems, because it does pay off (IW2, 9/8/05).

The students can easily edit their papers using the Track Changes functions. In addition, the instructor can identify how much they edited because of the color coding.

One of the students, who was able to write well, wondered why she had to use Track

Changes. However, after the instructor encouraged the student to revise some parts, she

realized that even a student who can write well needs to spend time going over the draft,

revising and polishing it. This is what the instructor believed was the most important

thing for writers to do. The instructor had devoted much time to teaching the importance

of revising the first draft to make the paper better. In previous semesters, making

revisions on the hard-copy paper, including the instructor's feedback, did not motivate

students to revise. The instructor was better able to see the changes in the quality of the

students' papers after they had used Track Changes (IW9:11/3/05, IW10:11/10/05,

IW11:11/17/05, IW13: 12/8/05, and SP).

> I'll say to them: this is important, and that's why we're doing it in class because I want to make sure you do it and I want to make sure you do it with great energy because if you don't know how to do this to all your work—you could work forty hours on a paper but if you don't know how to revise and edit, it's worthless. In the professional world that you're going to get into, it's the vision and polish that is the money maker (IW9:11/3/05).

> As I said before, I think what excited me was Track Changes. Just a little gimmick, it's been there forever. I see the quality of the revisions that my students are doing. They may have done that in the past, but they didn't see it. This was a very eye-opening thing for me. I tend to think that maybe with Track Changes they do a better job because there's something about the formality of that and ease of it—accepting changes—instead of taking a draft and writing them in and doing that (IW11:11/17/05).

> I think the exciting thing about this Track Changes is that students accept the workload of revising and editing, which is one of the hardest things to get students to do….. So finding some way of getting them to generate the energy and commitment to doing it consciencously with a goal to make it better…that's hard. ….something about the formality of a computerized something that makes it real (IW13: 12/8/05).

Artifacts of student writing clearly demonstrated to the instructor that his students

became better writers after using this technology. After students submitted the first draft

to the instructor in an electronic format, the instructor gave feedback outlining what parts they should revise, directly over the parts, instead of at the end of the document or in the margins. Moreover, using Track Changes allowed the instructor to write his commentary in greater detail on specific parts since Track Changes automatically accounts for the size of margins and the number of comments. The revisions were not only mechanical errors, but also involved content and style of writing. Based on the feedback, the students then made revisions. Although Dr. Ish gave feedback on students' papers by hand-writing his comments in previous semesters, he was not able to see students make many revisions on the final draft in the paper and pencil format. However, using Track Changes, Dr. Ish was able to identify that students actually made the revisions. He was able to easily recognize how much time each student spent and the amount of effort they put forth to make their papers better.

   Students' perception about Track Changes.

   The five students who participated in the interview stated positive things about the Track Changes functions. For Amy, it was a first-time user of Track Changes, but she said that it was easy to use and it motivated her to write more (SIW: Amy). Beth said that she enjoyed using it and she was more motivated to revise her writing as well (SIW: Beth). Cary also thought that it was easy to use it, but she was sometimes confused when there were many changes made (SIW: Cary). Denise liked the color coding, and she thought that it might have helped her write and edit more (SIW: Denise). Elise had used Track Changes in other courses, and she liked the fact that the writer could have both original and revised versions of their papers (SIW: Elise). In contrast, only one student mentioned a negative comment, but as Dr. Ish assumed, for the most part, the students

felt that Track Changes motivated them to write more and to edit better. The comments of students supported the instructor's perceptions that Track Changes helped students' writing skills.

Results of Using Track Changes

In contrast to asynchronous discussions, Dr. Ish did not show any resistance to using Track changes, and was sure that his time and effort would pay off. Track Changes was compatible with his course and his teaching philosophy, and helped the instructor as well as the students. The functions of Track Changes motivated students to revise their papers and helped produced higher quality papers in the end. Furthermore, the functions were easy to use, and the color coding feature helped the instructor to easily recognize the revisions that the students made. The instructor's positive perceptions were supported by the students' perceptions. Students also felt that Track Changes helped them to become better writers.

Summary of Findings in Research Question Two-(b)

Dr. Ish's challenges with using technology in a college composition course for international students were (a) finding benefits in using technology for an ESOL writing course, and (b) overcoming his concerns about changing his traditional instruction. In his case, in the spring semester, he focused on keeping his traditional teaching styles; thus, he was not able to see any value in using technology. After he perceived that the method could be productive, although he showed resistance before, he was able to make more changes to his traditional course designs in the fall. Once he discovered that using technology actually benefited students' learning, text comprehension, and development

and expression of ideas, then he was able to value the use of technology and his resistance reduced dramatically.

In contrast, from his first introduction, Dr. Ish was positive about using Track Changes. He was able to see the value in using Track Changes. He believed that this type of technology could help students make revisions and could help the instructor better identify those revisions. In the end, the students produced higher quality papers. Dr. Ish actually discovered what he expected. Therefore, he had no resistance to using Track Changes.

<div align="center">Research Question Three</div>

In the third research question, key factors that influenced Dr. Ish's decisions regarding technology were examined. The research question is as follows: What factors influence Dr. Ish's decisions regarding his adoption of technology?

In this study, several factors were identified as having an influence on Dr. Ish's adoption of technology. They are (a) uncertainty, (b) workload, (c) advantages such as efficiency, convenience and effectiveness, (d) commitment to use technology, and (e) mentor's support. These aspects influenced Dr. Ish's decisions to use technology. They were tightly connected and the instructor faced dilemmas with each of them. Each aspect will be discussed individually below.

<div align="center">*Uncertainty*</div>

Dr. Ish expressed uncertainty about inserting technology into his teaching repertoire. He was uncertain whether or not these innovations would be more effective and efficient than his current teaching style, or whether or not they may create new problems (ML26:9/1/05 , ML27:9/8/05, ML28:9/15/05, ML29: 9/22/05, ML30: 9/29/05,

ML31:10/13/05: IW1:9/1/05, IW2:9/8/05, IW3:9/15/05, IW4:9/22/05, IW5: 9/29/05,

IW6:10/13/05). Dr. Ish was also not sure how much time and effort implementing these

innovations would require (ML26:9/1/05 , ML27:9/8/05, ML28:9/15/05, ML29: 9/22/05,

ML30: 9/29/05, ML31:10/13/05: IW1:9/1/05, IW2:9/8/05, IW3:9/15/05, IW4:9/22/05,

IW5: 9/29/05, and IW6:10/13/05). He was uncertain about how well these forms of

technology would work, and whether or not they would work as planned (ML26:9/1/05,

ML27:9/8/05, ML28:9/15/05, ML29: 9/22/05, ML30:9/29/05, ML 33 10/27/05,

IW1:9/1/05, IW2:9/8/05, IW3:9/15/05, IW4:9/22/05, IW5: 9/29/05, and IW8:10/27/05).

Furthermore, he was not sure whether he would be able to use the innovations wisely,

thusly making his invested time and efforts worthless. He did not know what advantages

these forms of technology would provide. Specifically, Dr. Ish had developed his

teaching style and course designs over 30 years; thus, he was cautious to change his

pedagogical methods without any evidence that doing so would be advantageous to

himself and his students. In the beginning, he expressed a great deal of uncertainty. Even

a semester after he had started using these forms of technology, he expressed uncertainty

and skepticism (ML24: 8/19/05, ML 25:8/23/05, ML26:9/1/05, ML27:9/8/05,

ML28:9/15/05, ML29:9/22/05, ML31:10/13/05, IW1:9/1/05, IW2:9/8/05, IW3:9/15/05,

IW4:9/22/05, IW6:10/13/05, and EM3:5/22/05). This may have evolved out of his use of

technology during the first semester, which required him to take time to set up course

materials and to operate unfamiliar functions. His impression of technology was that it

did take more time to adopt than he expected. Furthermore, he did not initially find any

advantages to using these forms of technology (ML24: 8/19/05, ML25:8/23/05,

ML26:9/1/05, ML29:9/22/05, IW1:9/1/05, and IW4:9/22/05).

Dr. Ish emphasized the importance of protecting the instruction that he had developed over many years even though many new functions were available to him (ML26:9/1/05, ML:27, 9/8/05, IW1:9/1/05, and IW2:9/8/05). He said, "I guess that my concerns are when I would start working something, and they would not work well. I have to redo something …and it gets messy. Students get confused (IW1:9/1/05).

He emphasized his own instruction that developed for many years by saying,

> I'm uncompromising. I think you have to be to protect yourself from thinking *Oh wow! There's so many cool things you can do with a computer* (IW4:9/22/05).

> My expectation is that it is going to take a lot of time…just setting up. But, I am unsure whether I am using it wisely. I am still not sure how the discussion group things are going to go. How I am going to use it, and… it takes time to find out. It is one of the things, if I am trying to do things more efficiently, but it takes more time to do it…(IW1:9/1/05)

Workload

Dr. Ish constantly mentioned workload and time issues. Learning new functions, modifying the course design, and preparing for something new requires time. Moreover, the instructor mentioned that writing teachers tended to have a more intensive workload than professors in other departments because of the number of student papers. If there were no advantages, then there would be no reason to use these forms of technology, in Dr. Ish's opinion. He wanted to find clear evidence that there *were* advantages to using these forms of technology (IW1:9/1/05, IW2:9/8/05, IW5:9/29/05, IW6:10/13/05, and IW13:12/8/05).

> They are always issues that a writing teacher must wrestle with. Given the labor-intensive nature of a writing teacher's workload, any use of technology must be considered in light of the time/effort/energy it takes to learn to use and incorporate it into the course….and always measured by its pedagogical payoff. There is no reason to give students and [their] teacher time-consuming activities to write and grade if the learning outcome is minimal (IW13:12/8/05).

However, he faced dilemmas and was torn between the demands of time, effort, and energy. For example, first Dr. Ish found advantages to using the flexible communication method of LMS. Using LMS allowed the instructor to inform students of changes or updates in the course plan or homework. Dr. Ish saw the convenience of sending e-mails to all students by using the communication or announcement functions in LMS (ML26:9/1/05, ML27:9/8/05, ML31:9/15/05 ML 36: 10/13/05, ML, IW1:9/1/05, IW2:9/8/05, IW3: 9/15/05, IW6:10/13/05, and IW11:11/17/05).

> Well, I might have mentioned this before so I'm not sure if this is a new thing, but it was nice to know that I can change my assignments and remind students of things with e-mail. It's a nice little tool to have that can really change the way I can think. I like the easy email function when I want to update all students in a class. For example, you probably got the email in which I reminded students that they needed to record more often. I don't have to wait until I see them in class. Being able to put assignments on BB is also a plus (IW11:11/17/05).

On the other hand, Dr. Ish also found a negative side to using these communication functions; he found that the technology kept him busy checking e-mail and other online components. He said "I'm not looking for extra work. The problem with those nice little gimmicks...the problem with e-mail and the problem with Discussion Boards—open-ended like that—you've got to keep checking them" (IW5:9/29/05).

Such communication tools require having regular access to an e-mail account or course systems. Although he liked the idea of flexible communication, he still identified a negative side to using it. Since the advantages did not outweigh the disadvantages, he still had trouble accepting this form of technology.

Advantages: Efficiency, Convenience, and Effectiveness

One of the biggest issues was the dilemma of producing more efficient work while its affects on student outcomes were unclear. Dr. Ish had brainstormed several ways to use

Blackboard and Track Changes in his course; however, after considering the increases in

his and his students' workloads, the instructor decided not to try them because they were

not outweighed with clear advantages (ML24:8/19/05, ML24: 8/23/05, ML28:9/15/05,

and IW3: 9/15/05).

In fact, the instructor even wondered how he would use LMS to collect homework;

submitting homework by e-mail or through LMS, could be more convenient for students

(ML26: 9/1/05 and IW1: 9/1/05). Moreover, collecting homework via LMS and e-mail

may be convenient for the instructor as well. However, Dr. Ish found that reading papers

on the computer monitor was a strain on his eyes and accessing the papers took a great

deal of time, especially considering various network errors and downloading variances

(ML27:9/8/05, ML28: 9/15/05, IW2:9/8/05, and IW3:9/15/05). He eventually decided to

collect students' papers both by hard copies and electronic files (ML29:9/22/05, and

IW4:9/22/05). Thus, the instructor was conflicted, having not been able to weigh the

possible advantages to using these forms of technology with their relative disadvantages,

and was not able to determine the most efficient, convenient, and effective ways to use

them in his course (ML24:8/19/05, ML25:8/23/05, ML27:9/8/05, IW2:9/8/05, and

EM2:2/27/05)

Dr. Ish expressed incompatibility between his English course and technology,

because he expected that technology should help work become faster and better.

> One element is teaching, a performance skill, and there are just limitations—the
> computer cannot just do anything for you. They make the *process* of writing
> [easier]. It is a little different. But, you still have to read the paper, and you still
> have to comment on them (IW2:9/8/05)

Dr. Ish said that using a computer might take more time, because he had to

log in to the appropriate site and access the right folders and files. Thus, he perceived that

working with hard-copy papers was much easier (ML27:9/8/05, ML29: 9/22/05,

IW2:9/8/05 and IW4: 9/22/05).

> Sometime, it is a lot easier just to pick up the papers and make notes on then than opening up…turn on your computer, getting into the Blackboard…pull out the file…make the comment and save the file, you know? It could be a lot of tedious… (IW2:9/8/05).

In addition, Dr. Ish shared that reading students' papers on the computer screen was

hard on his eyes. Also, when he handled the files, he often made typing errors while

saving files, which took more time (ML27:9/8/05 and IW2:9/8/05). Thus, he perceived

handling hard copy papers were much more efficient. Since this aspect was not related to

students' learning outcomes, it was hard to determine which way was better: hard copies

of text or electronic.

> If students give me the book, I just page through to read. Sometimes, using a computer takes more time and is harder on the eyes. It is harder logistically to do certain things like short journals. For example, I have a bunch of papers from another course. It is my business writing course, homework assignment. If I have them in a pile, zi...zi...zi…and them I have them in computers again, open up the file, you know? I am not a good typist either. I will make mistakes. I have to save, and send it to them. Here, I just give them more in class (IW2:9/8/05).

Dr. Ish shared that there were some students who sometimes sent him e-mails asking

whether or not they could submit their papers to LMS because they would not be coming

to class, although all students came to class on the day that a paper was due when LMS

was not available (ML37: 12/2/05 and IW12:12/2/05).

What Dr. Ish was looking for were *advantages,* which would save both the

instructor's and students' time *and* make the students learn better. Thus, it was very hard

to find advantages. He said, "We talked about my composition class, it is very hard to

find the way to use it effectively and actually save time overall, or do things better overall.

That is why we struggle with that" (IW2:9/8/05).

In one of the later interviews, Dr. Ish emphasized that time and workload, pedagogical effectiveness, and efficiency were important elements to consider when making a decision to use technology (ML27:9/8/05, ML28:9/15/05, ML29:9/22/05, ML30:9/29/05 ML31:10/13/05, IW1:9/1/05, IW2:9/8/05, IW3:9/15/05, IW4:9/22/05, IW5:9/29/05 IW6:10/13/05, and IW13:12/8/05).

> Time and workload are really the same thing; pedagogical effectiveness, my time, students' time. I think it's the time, the extra time it adds to both the teacher and the students' schedule and is it worth it. That's sounds like efficiency or effectiveness, but efficiency could be measured in a number of different ways: the pay off, is it worth all the extra time and energy that a student and professor put it into it for the pedagogical pay-off compensating enough for [efforts]…(IW13: 12/8/ 05).

In the previous section on asynchronous discussions, Dr. Ish's perceptional changes were illustrated. Initially, he had strong resistance because he thought that it would cause an increased workload without clear effectiveness. However, he discovered that the integration of asynchronous discussions had improved the ability of quiet students to communicate, thinking processes of students, and the quality of face-to-face discussions. The discovered advantages were very powerful and changed the instructor's view completely.

<div align="center">

Commitment to Use Technology

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Commitment was one of the key factors when Dr. Ish tried to integrate technology. Toward the end of the study, the instructor explained the reasons why his resistance to using technology was reduced. He explained that as he continued to use technology, his skills improved. In the past, he tried to be committed to using technology, but once he found a problem he would quickly become discouraged. Previously, he did not even spend more time to make it work. This comment indicates the importance of

commitment to improving one's use of and skills with technology. Specifically, when

users face problems and issues, they may tend to quit using technology. If users have a

strong commitment, they continue to use it and may find better advantages. In such a

difficult stage, users may need to have advice from mentors or supporting members of the

technology support division. In addition, the instructor mentioned that his commitment

to integrating technology was linked this time to this research study.

> You know when you keep using it you get better at it. It's a combination of my
> commitment to your research as well. I'm going to do this as best I can. In the
> past I just would say *oh I tried; I don't like it.* Whereas now I just say *well, I may
> be talking to[Mentor] every week for forever, and that's my commitment to
> research*—to give you my best try at technology and also I know if I know how to
> do it better, things will go better, too. I've always been committed to technology,
> but I didn't want to put in the time and effort to make it work. So my resistance
> … has been partially my determination to stick with it to try things, some
> suggestions you've made, these meetings, when you ask me and I actually have to
> think it [makes my brain] hurt (IW13:12/8/05)

At the end of his second semester using technology such as Blackboard and the Track

Changes function, the instructor recommended that other faculty members try to use

technology, saying to them "Take your time, think it through, decide whether it's worth it,

plan well, don't give up the first time, re-evaluate, continue…, and [don't] get

discouraged if it doesn't work, which is true about anything in life" (IW13:12/8/05).

Furthermore, he continued to emphasize that instructors should not give up after they try

once.

> Take your time, and be careful. Don't just try it once; stay with it. I think the
> thing that any instructor that has never used it before needs to be convinced of is
> that it is really does save you time and gives you a sense that these students are
> learning something they couldn't' have learned without it. It adds to your
> course—not use the look of it, the glitz—but the actual substance of it. If you use
> it wisely, it works. It does take work like anything that is worthwhile. They'd
> have to be convinced that it does its work and it saves them time and if there's a
> pay-off and that students really think you're cool (IW13:12/8/05).

The key aspect that the instructor mentioned was that the other faculty should continue to use new forms of technology in new ways. In fact, he shared that he had a few moments when he had thought about giving up his efforts to use technology, "There are times when I think it is not worth it, given what I am trying to do in my class. . ." (IW2, 9/8/05). However, he somehow continued to use it and kept seeking better ways to use it because he had a strong commitment and was able to receive support from the mentor (ML33:10/27/05, ML38:12/8/05 IW8:10/27/05, and IW13:12/8/05).

Mentor's Support

Dr. Ish mentioned that attending workshops was helpful to gain basic knowledge of new programs. Having an individual mentor was also important, especially for learning the specific elements of the program and their advantages in individual class contexts. This indicates that relevant support and workshops were important to the instructor (ML27:9/8/05, ML33: 10/27/05 ML38:12/8/05, IW2: 9/8/05, IW8:10/27/05, and IW13:12/8/05).

> Working with you, we work on specific things to get specific results. To me, that's much more useful. The workshops are sessions...in fact; I'm going to two in a few weeks. They're good just to keep me up to date, to see the potential, the possibilities...like with Blackboard I had tried to use it a few years ago when it first started. I didn't like it, it didn't work too well, but I realize it could very well be that I didn't know enough about it or hadn't thought about it. Now, I use these sessions as stimuli to make me start thinking about them and to learn the basics of it. Certainly those made the difference in the fact that when I use Blackboard— when you showed me—things come right back because I've already learned it. Working with you is much more specific, much more oriented towards a particular problem, and that's how I think I learn best. When I really want to do something specific, and someone shows me how to do it, so it's...I think its part of my job to stay up with (IW8:10/27/05).

In this study, the factors influencing the instructor's adoption of the innovations were different in each stage because the instructor's concerns tended to vary somewhat in each

stage. However, helping the instructor find advantages was consistently important in each stage in order for him to continue to use it. The mentor specifically needed to find advantages or values that were compatible to his course design and his teaching philosophy. Knowing this information about compatibility was a priority for the instructor. The instructor was not always receptive to the advice from the mentor; however, if he felt comfortable about the advice, he was willing to try following it (EM6:6/9/05). Based on his successful and less-than-successful experiences, the instructor sought other advice, and then the mentor gave additional advice that addressed the instructor's experience (EM33:5/22/05 and EM5:5/10/05).

Moreover, the mentor always respected the instructor's desires and decisions even when she gave him advice or expressed concerns about his decisions. In other words, the mentor always acknowledged the experience and philosophy that the instructor had developed over his years of teaching. The instructor liked this approach rather than being told what to do (ML38:12/8/05 and IW13:12/8/05).

> And I think the fact that you haven't been trying to push it on me. There might be a tendency, a temptation, for someone less considerate or less aware to say, *Why don't you try this or try that*. You've taken the very indirect, probably very Japanese approach. I appreciate it (IW13:12/8/05).

Summary of Findings in Research Question Three

There were five key factors that influenced the instructor's decisions regarding his adoption of technology: uncertainty, workload, perceived and discovered advantages, commitment to using technology, and mentor's support. These factors are closely related to one another. The instructor was uncertain about how new instruction would work and how effective it would be in the end. He was also not sure how many hours he would have to spend in order to implement new technology in his instruction. Finding the best

way to use technology often required him to add on to his workload; thus, he faced the dilemma of weighing advantages against his increased workload. Another important aspect was commitment to using technology. Initially, he gave up easily when faced with problems; however, he later learned to persevere. In this study, his commitment to use technology worked well with the mentor's support. He continued seeking advice or working on his own to make the technology work better. Since the mentor respected his decisions and concerns, she did not push him to use technology in any certain way. She tried to give advice whenever the instructor needed. Therefore, he felt comfortable with the indirect advice and was able to continue using technology.

Summary of Chapter IV

The first question examined the instructor's Levels of Use regarding technology. Dr. Ish's *Levels of Use* increased from *Level 0: Non-use* to *Level IVB: Refinement* over two semesters. After his vacation, his adoption fell, but then increased again during the fall semester. Each semester formed a cycle, with the start of the second cycle retracting one more level than the level reached at the end of the prior semester. In this study, Dr. Ish was not able to develop adequate knowledge to reach *Level IVB: Refinement* until he actually discovered the clear cognitive effects of using technology. Because of unclear cognitive effects, he continued to consider the option of not using technology in the future. However, since he eventually confirmed improved student outcomes, he became certain that he would use technology next semester.

The second research question examined Dr. Ish's perception. The first part of the question investigated evolving perceptions which tracked his journey from skepticism to excitment. He initially did not have any specific concerns about using technology

because he did not have enough knowledge to form any specific concerns. Furthermore, he did not believe that technology could actually help student learning, although he thought that it might be important for students to explore the technology that they would use in other college courses.

Once Dr. Ish started using technology, he faced several technical problems and spent a lot of time solving problems; thus, he developed several concerns about using technology. He was afraid he would spend too much time using technology without recognizing any clear advantages. Therefore, he showed resistance during the beginning of the second semester.

Two events made the instructor's perception change dramatically. One was not directly related to technology used in his teaching, but indirectly related to his technology skills. He attended an Outlook workshop which made him question whether he knew the most skillful ways to use it, and then he realized that he should keep learning technology skills. In addition, after Dr. Ish discovered improved student learning outcomes, his resistance reduced dramatically and he became open-minded about technology. He was more receptive to the mentor's advice. One critical perceptional change was that he became aware that technology could help student learning. In fact, the objectives of using technology shifted from introducing technology to students to using technology to help students become better writers.

The second part of Question Two investigated Dr. Ish's challenges using technology. Since the instructor believed that his writing course might not be conducive to using technology, finding value for his well-designed ESOL writing course was challenging. . In the spring semester, he realized that changing only a little was not enough to affect the

desired result; therefore, he was willing to make more changes to his traditional course design in the fall. He had concerns about using new instruction that might not work as well as his original course design. However, he had to overcome those concerns in order to discover the value of technology. In contrast, the instructor was willing to use Track Changes because he perceived that Track Changes could bring advantages to both the instructor and the students. In the end, students were able to produce higher quality papers.

The third question investigated the key factors that influenced Dr. Ish's decisions regarding technology. The five key factors identified are the following: uncertainty, workload, perceived and discovered advantages, commitment to using technology, and appropriate support.

These factors were interrelated. The instructor was uncertain about how new instruction would work and how effective it would be in the end. He was also not sure how many hours he would have to spend in order to implement technology in his instruction. Finding the best way or discovering advantages to using technology often required him to add on to his workload; thus, he faced the dilemma of weighing advantages against this increased workload. Furthermore, he wanted to make sure the advantages would be compatible to his course and teaching philosophy. Some ways might have been effective, but he did not see their value because he was satisfied with his traditional course design.

Another important aspect was commitment to using technology. Initially, he gave up easily; however, he later learned to persevere. In this study, the importance of his commitment was discovered. Furthermore, the mentor's support was important for him

in order to use technology. The mentor specifically needed to find advantages or values that were compatible with his course design and his teaching philosophy. Moreover, the mentor always respected Dr. Ish's desires and decisions, although she gave him advice and sometimes expressed concern about his decisions.

CHAPTER V. DISCUSSION

The purpose of chapter five is to discuss the findings about the four research questions from various perspectives and to present conclusions and recommendations. Chapter five consists of four sections: summary, discussion, conclusions, and recommendation. The summary includes a brief outline of this study. The discussion section presents arguments built upon the literature review in chapter two in light of the findings of this study. Finally, the chapter presents conclusions based upon the arguments and recommendations.

Summary

This study examined one experienced English instructor's Levels of Use, perceptions and challenges, and key factors that influenced his adoption of technology. This research was a qualitative case study, which documented the instructor's in-depth perceptions, such as expectations, concerns and reluctance, regarding his use of technology for instruction of international students. This one-year research project examined the instructor's first integration of technology such as the basic functions of Blackboard and Track Changes.

In this study, the data were collected through the researcher's logs of the instructor's training, email correspondence, and transcriptions of Discussion Boards during the two semesters, as well as weekly interviews with the instructor, student interviews (n=5), and student course papers from the fall semester. The data were analyzed using N6 Software and other inductive methods. In addition, the instructor's adoption of technology was evaluated using LoU developed by Hall et al. (1975). The research questions were: (1) How do the instructor's Levels of Use regarding technology change over time in a

college composition course for international students? (2a) How do the instructor's perceptions about using technology evolve over time? (2b) What are the instructor's challenges with using technology in a college composition course for international students? (3) What factors influence the instructor's decisions regarding his adoption of technology?

The first question examined the instructor's Levels of Use. His Levels of Use increased from Level 0: Non-use to Level IVB: Refinement over the two semesters. Each semester formed a cycle, with the start of the second cycle showing a regression about one or two level(s) from the level reached at the end of the prior semester. In this study, the instructor was not able to reach Level IVB: Refinement in the category of Knowledge until he actually discovered clear evidence of students' increased learning with the use of technology. At first, because of unclear cognitive effects, the instructor considered the option of not using technology in the future.

The data of Research Question Two (a) showed that the instructor was initially skeptical about using technology and did not believe that technology would help students' learning. Because he faced several technical problems and was not able to find many advantages, he showed strong resistance to using technology after the first semester. However, two events made him change these perceptions: a workshop about Microsoft Outlook at the institution and self-discovery of positive students' outcomes such as better understanding of reading and quality writing. The workshop made him question whether he knew the most skillful ways to use technology. Although he thought he knew how to use the Outlook functions, he learned other ways to complete the same task more efficiently. Discovery of improved students' outcomes helped him to see that using

technology could enhance student learning. These two events reduced his resistance dramatically, and he became more open-minded.

The second part of research question two investigated the instructor's challenges using technology in a college composition course for international students. Because the instructor believed that technology would not fit in his writing course or his teaching philosophy, it was challenging for him to find the value of using technology for his ESOL writing course. In addition, he wanted to maintain the traditional teaching style and class format that he had developed for over 30 years and that he believed worked well. Thus, it became much harder to find advantages while maintaining his original course designs. Over the course of this study, he overcame the challenges.

The third question investigated the key factors that influenced the instructor's decisions regarding technology. Research analyses identified five inter-related factors that influenced the instructor's decisions regarding his adoption of technology: uncertainty, workload, perceived and discovered advantages, commitment to using technology, and mentor's appropriate support. Finding the best ways or discovering advantages to using technology often required the instructor to increase his workload; thus, he faced the dilemma of weighing advantages against his increased workload. Furthermore, the advantages needed to be compatible with his course and teaching philosophy. Although some strategies for adopting technology might have seemed effective, this instructor needed to discover the values to using technology for himself; he needed to personally fit the technology into his belief system concerning teaching and learning. When he faced technical problems in the past, the instructor gave up easily. He was not committed to using technology. However, his commitment grew during this

study because he received support from the mentor, and he discovered improved student outcomes from using technology. Receiving support from the mentor seemed to be crucial. It was specifically aimed at helping the instructor find advantages and values in technology that were compatible with his course design and his teaching philosophy. Moreover, the mentor always respected the instructor's decisions and philosophy, although the mentor gave him advice and voiced concerns about his decisions. Fostering the instructor's ownership of technology helped him maintain his willingness to use it.

Discussion

Methodological Considerations

Croswell (1998) and others emphasize how multiple data sources are central to qualitative research. As Yin (1994) describes the nature of case studies, he notes that the boundaries of real-life context are clear but that within those limits, boundaries are unclear between the various phenomena being studied. For example, in this study the English classroom was clearly the outward boundary, yet the teacher often became a learner and at times the students became informants. The instructor, who was primarily learning from the mentor, at times became a technology mentor himself to his students.

The case study methodology also allowed for examination of other flexible boundaries. As such, the data demonstrated that there were no rigid margins between texts for reading and texts for writing, nor was there a strong division between instruction in reading comprehension, writing, and oral expression. Finally, it should be noted that the case study method was similarly useful because the curriculum for print and for digital texts flowed into each other, especially as students read the book *Ishmael* and then read online their classmates' responses to the reading. That is, the content instruction

began to weave from paper to digital environments in ways that best used the skills of the instructor and that differentiated the learning for different student needs.

Question One: How does Levels of Use Change Over Time

Dr. Ish's Levels of Use regarding technology (Hall et al., 1975) showed a gradual increase from Level 0: Non-use to Level IVB: Refinement during the spring and fall semesters of 2005. However, this was not a linear change; rather sometimes the Level of Use remained at the same stage for several months, or even regressed. In this section, an importance of persistence to learning will be discussed.

Importance of Persistence to Learning

There seem to be two aspects to persistence. One is active involvement and the other is time for reflection.

The importance of *active involvement* was evident in the findings of this study. The importance of continually using technology has been previously suggested by Hall et al. (1975). They suggest that if a professor continues to use a form of technology, the use will turn into a regular routine, and the user will be able to increase learning effectiveness. As Hall et al. (1975) state, Dr. Ish went through a *personal concern* stage, and then his concerns lessened in the *management* and *consequence concern* stages. Hall et al. also (1975) state that in the first or second cycles, individuals generally do not use an innovation as effectively and efficiently as they use it in their fourth or fifth cycles. In this case study, each semester formed a cycle, which gradually shifted from low levels of use to higher levels of use. In the second cycle, Dr. Ish was able to use technology more effectively than in the first cycle. Although this study did not examine his fourth or fifth cycles, even in his second cycle he showed progress, from which could be extrapolated

that, as he continued to use technology, he would be able to find more effective and efficient ways to use it.

Dr. Ish increased his Levels of Use regarding technology as he became more involved with technology. Thus, involvement with technology was important: For an instructor to use technology effectively and efficiently, he or she must jump in and try using it. Otherwise, he or she is caught in a *Catch 22* in which he doesn't get more proficient at using technology because he is not using it and he cannot get better without using it.

This study contradicts the suggestion of Christou, Eliophotou-Menon, & Philippou (2004) that there is no relationship between teachers' concerns and time spent using the innovation. This study demonstrated that the instructor's concerns were correlated with the time involved with technology. Although there were still many other variables to be considered, this case study discovered that, as the instructor spent more time using technology, he became more skillful using it. The Levels of Use categories increased as he spent more time utilizing technology within his course. This indicates that maintaining regular involvement with technology may be essential.

Reflection is a second important activity of persistence to learning about an innovation. Time away from teaching courses, such as summer vacation, may allow for time to develop other Levels of Use categories, such as acquiring information. In Dr. Ish's case, it was during June, after the spring semester and before the summer session, that he was able to reflect on his instruction in the spring semester. This may be related to Freese's views (1999), in which having an opportunity to reflect on one's instruction by linking theories or research, is important to recognizing one's weaknesses. When Dr. Ish had time away from technology, he sought advice from his mentor and reflected on his

instruction in order to develop more convenient, more efficient, and more effective ways to use technology. Persistence to learning led to active involvement and reflection, which was important to increase Levels of Use.

A second aspect of reflection is the deep introspection that is the hallmark of good teaching. As such, the importance of increasing the Levels of Use is related to the primary goal of teaching. Instructors should not simply use technology, but consider how to use that technology for students to acquire knowledge (Clark, 1983). As Clark states, employing technology elements without examining needs and conditions will not produce better learning outcomes. Dr. Ish's statements indicate that he would not use technology without considering students' learning outcomes. But, as a veteran teacher, his reflection was even sophisticated. Although his initial goal of using technology was to help students explore instructional technology that they may use in future college courses, over the course of time, he gradually focused on student learning in his own course and with very specific attention to students' reading and writing development. The process of reflection allows the instructor to refine and to offer high quality of technology use. Therefore, students receive greater benefits if a higher level of technology use is implemented.

Summary of Question One

One critical element to enhancement of technology integration is persistence in the use of technology. If one has active involvement in the use of technology and reflection on teaching, there is likely to be an increase in a Levels of Use.

An instructor may not always increase the Levels of Use in a linear way. If an instructor increases Levels of Use, students can receive maximum benefits of technology.

Question Two (a): How have the Instructor's Perceptions Evolved

Dr. Ish's perceptional change from showing resistance to becoming open-minded to technology is discussed by illustrating four aspects: (a) emerging resistance, (b) shifting objectives for using technology, (c) reactions to handling problems and (d) becoming open-minded to technology.

Emerging Resistance

Evans (1996) suggests the importance of *desirability*. "Desirability depends crucially upon dissatisfaction and relevance" (Evans 1996, p.80). In the data about Dr. Ish's thoughts prior to the spring 2005 semester, it is evident that he had no concept of how much time he would spend and how technology would initially work; therefore he had no concerns about or resistance to using technology. In contrast, later during the time prior to the fall semester, the instructor expressed strong skepticism and stated concern about workload issues referring back to his experience from the spring semester. This illustrates Evans' reference to dissatisfaction, a crucial element of desirability. The instructor's expectations toward technology, which were that technology should save his and his students' time, make things faster, and improve students learning, were not satisfied and technology did not show relevance to his central objectives. Therefore, Dr. Ish's perceived dissatisfaction in using technology and perceived mismatch between his goals and what he was experiencing during the fall 2005 semester link well with both aspects of lack of desirability (Evans, 1996).

Collinson and Cook (2000) state that using technology could create unexpected problems, could be time-consuming, and could end up being a waste of time. Dr. Ish noticed and verbalized all of these concerns. Furthermore, Fullan (2001) states that

identifying that the change will bring more advantages than problems is important in order to foster commitment, but Dr. Ish at certain junctures perceived that change would bring more problems than advantages.

For example, Dr. Ish identified the convenience of collecting students' papers using LMS (Blackboard), but he recognized three other disadvantages: requiring several steps to access a correct file took time, reading papers on the screen was hard on his eyes, and students produced new excuses for absences. Although Dr. Ish found one small advantage, but the advantage brought several other disadvantages. This type of questionable advantage made Dr. Ish perceive that using technology would not include what he valued and would not match his past teaching experience. He perceived that using technology was incompatible with his course (Rogers, 1995). Therefore, Dr. Ish's perception of dissatisfaction, irrelevance, and lack of compatibility created resistance to using technology in his course.

Shifting Objectives for Technology Use

In the early stage of this study, Dr. Ish has a particular image of the way that technology was used in courses and that was an image that viewed technology primarily for drill and practice. But, this type of computer-assisted instruction, which was a trend from the 1950s to the 1990s (Chinnery, 2006), is outdated. Yet, Dr. Ish's initial perception framed his belief that using technology would fit into his course design and his teaching philosophy in only a very limited way. Thus, Dr. Ish's original objective for using technology was to simply familiarize international students with technology that may be used in their future courses.

However, by December, 2005, he confirmed that technology could help students enhance much broader learning outcomes. He discovered that having online interactions stimulated students to develop insights, and that using CMC was compatible with his teaching philosophy. Due to his constructivist philosophy, he identified that CMC was compatible, just as Chinnery (2006) reports that other language instructors did.

Reactions to Handling Problems: Overcoming Frustration or Uncertainty

Brandsford, Derry, Berliner and Hammerness with Beckett (2005) stated there are two approaches toward problem solving: "routine expert" and "adaptive expert" (p. 49). *Routine expert* focuses on an efficiency perspective, which is considered "problem elimination" to allow people to solve problems quicker and easier (p.50). However, using this approach may not allow them to change their core competencies in the long run. The approach of *adaptive expert* allows people to examine problems deeply, even though the efficiency may not be increased at the moment. As an adaptive expert, they may acquire more flexible skills, and change long-term ideas and beliefs.

Dr. Ish initially sought a problem elimination approach, but later he spent time examining problems and reconstructing his ideas and skills. His shifting attitude indicated that he did not try to simply eliminate problems. In this case, embarrassment may have helped him examine problems carefully, and in the later stages of the study try to solve problems himself. Dr. Ish did not want to be embarrassed by repeatedly asking the same questions. Problems related to technology are much more complex than other problem-solving scenarios, even those that are media-based. In the early stages of using such technology, many instructors may not be able to easily figure out the problems because they could be in the computer hardware, the Internet, LMS or other software.

First, someone who encounters these obstacles must determine the source of the difficulty, because only then does one know who to call for help. Instructors or other users realize that many problems cannot be solved by the users themselves, but even so, the users must be savvy enough to navigate a range of problems. Initially, Dr. Ish could not sort out the many technical problems associated with using technology, but later he was able to navigate when he could address the problems himself and when he needed to ask for expert help.

Dr. Ish became an adaptive expert over the course of the year. Dr. Ish's perceptions changed when he recognized that the nature of technology requires one to be flexible. This change may be evidence of how Dr. Ish reconstructed his ideas and beliefs about technology, as Bandsford, Derry, Berliner and Hammerness with Beckett (2005) suggest. He had previously taught courses for many years without using technology and was able to teach and control his courses as planned. However, he was not used to situations in which he had to change his course plan because of technical problems. Thus, he was initially upset that he could not follow his definite plan. His professional identity did not include handling problems with technology. As an adaptive expert, Dr. Ish developed proficiency at asking advice for technical problems, functioning flexibly while teaching with technology, and reconstructing his vision of how the problems related to technology integration were less about surface technical issues and more about the essential alignment with his key objectives for student learning.

Becoming Open-minded to Technology

Fullan (2001) suggests that the element of resistance in the early stages of technology integration may be related to fear of change. Since Dr. Ish had developed his course for

many years, he wanted to protect and maintain his course design. Therefore, Dr. Ish wanted to instruct his students by using asynchronous discussion forums in a traditional, synchronous format according to his pre-existing course design.

Way (2001) suggested that clear evidence of the effectiveness of using technology should be provided to instructors to help them decide whether and how to use technology. However, as Rogers (1995) stated, when instructors implement an innovation, they still may suffer from uncertainty and may need to seek answers about how it works. They may need to confirm how the innovation will fit with their previous work because change reveals whole new worlds that had not been previously been obvious.

In this case study, as it was said earlier, Dr. Ish used a "grass-roots" approach for his curriculum development (Schubert, 1986, p376). No authority power was involved. Dr. Ish was the center of instructional change. His perceptional shift occurred naturally based on his experience with and discovery about technology. Rogers (1995) stated that an individual forms specific attitudes in the persuasion stage, based on knowledge about the innovation. An individual develops a favorable or unfavorable attitude by considering the application of his situation or problem. Dr. Ish formed an unfavorable attitude in the beginning of the fall semester based on his experience in the spring semester with the use of Discussion Boards. .

Dr. Ish initially did not have the skills to integrate technology and had not discovered any clear positive effects, but in the fall semester, an Outlook workshop that he attended stimulated him to think in a more open-minded way. He questioned whether he knew enough about technology to determine that technology was truly not reliable or that it lacked any advantage. He became aware that there may be more room for him to

improve his skills and knowledge. Debski (2000) suggests that this pattern of initially

having a difficult time finding positive effects is a common experience.

After Dr. Ish found actual advantages to using LMS, his perceptions changed. He

became more open-minded about using technology, and actively sought better ways to

use it in his courses. Although reliability of technology and workload remained the same

when adding technology, he became more receptive to using technology. Reliability of

technology and workload were no longer issues after he discovered value of using

technology. Dr. Ish finally formed a favorable attitude about using technology in his

course.

Question Two (b): Instructor's Challenges

Overcoming concerns about changing his traditional course to find a value was the

most critical challenge for Dr. Ish. He perceived that writing courses do not teach

concrete knowledge and cannot be assessed based on an algorithm. Furthermore, a

writing course for international students particularly could not be formulaic, but needed

to address the specific strengths and weaknesses of English language learners. Thus, Dr.

Ish would hardly be able to use technology to grade students' papers and assignments.

Dr. Ish was interested in the ways to use technology to save time and produce better

learning outcomes. However, he was resistant to changing his course design, which he

had developed for many years, because alteration would diverge from his teaching

philosophy.

Utilizing the spatiality and temporality of technology was one of Dr. Ish's challenges

(Smith, Alvarez-Torres, & Zhao, 2003). Asynchronous and virtual formats allowed

students to participate in discussions from anywhere as long as they have Internet access

(Smith, Alvarez-Torres, & Zhao, 2003). For Dr. Ish, a new learning format for class discussions that was spatially removed and did not require access during a specific time, was a great leap of pedagogical transformation. Dr. Ish expressed his concerns about students' attention spans at home or outside of the classroom setting. In traditional settings, Dr. Ish could always observe his students. However, in asynchronous discussion forums, Dr. Ish could not perceive students' visual cues and, thus, could not perceive their physical participation in the discussions. In addition, he wondered if adding online discussions might be too much work for students. If he were to implement asynchronous discussions, he wanted to simply add them to the existing assignments. This challenge is an example of the problems that arise when someone uses online interactions and is separated in time and space, a phenomenon specifically related to using CMC. As Harvey (1989) states, recent innovations eliminating spatial barriers have resulted in more contact across geographical areas that are in reality very great distances.

Asynchronous discussions such as Discussion Boards are designed for students to have more geographic and chronological diversity; for example, they are not bound by place or by time (Smith, Alvarez-Torres, & Zhao, 2003). Dr. Ish initially incorporated asynchronous discussions into his course by instituting real-time Discussion Board use in the Language Lab during course hours. In this use of asynchronous discussions, Discussion Boards, Dr. Ish changed only the forms and physical place of the discussion he would have prompted in a face-to-face class. His use of Discussion Boards in this way was similar to synchronous approaches, but it lacked the technological power that true synchronous platforms have. In a truly synchronous platform, students participate in a virtual discussion and have the ability to respond promptly to each other.

Because his use of Discussion Boards, which required students to be present in the same room in the spring semester of 2005, did not work well, he tried to use them differently in the fall. He tried using Discussion Boards in a new way, requiring students to submit prompt questions from home in response to their reading of a class novel. This initiative by Dr. Ish fit with what Hall et al. (1975) suggest about innovation. They state that it is necessary for a person to modify what he or she has traditionally done while in the process of adoption. In other words, the instructor could not merely supplant online, asynchronous discussions for his former use of face-to-face discussions in class, but he needed to devise new ways to incorporate discussions in order to be able to fully adopt Blackboard functions. Moreover, since asynchronous discussions function require different linguistic cues for turn-taking and communication (Lee, 2002), there is no reason to assume that the instructor could even use asynchronous discussions in the same way that he would use face-to-face discussions and discussion prompts.

However, the format included several problems, which can be explained by studies conducted by Sotillo (2002) and Lee (2002). The sentences that are produced in the synchronous environment are short and simple with many errors (Lee, 2002). Because students are required to respond quickly, they often do not have enough time to develop in-depth ideas. In fact, although students posted about 150 threads during the class hours, the instructor did not find any insightful ideas.

In contrast, during the fall semester of 2005, the instructor used Discussion Boards in a purely asynchronous discussion manner. Having done so, Dr. Ish found that the students' questions were insightful and students demonstrated greater thought and effort. The instructor was impressed by the quality of students' threads and enjoyed reading

them. In this instance, Dr. Ish was able to use Discussion Boards to inform synchronous, face-to-face discussions in class instead of replacing them. Thus, he instituted a new innovation into his style of teaching to incorporate the new technology functions.

The success of the Discussion Boards in fall 2005 may be related to the format of asynchronous discussions. Because asynchronous discussions allow students to spend time constructing their sentences, they might have been able to think more before they posted their questions. This aspect was supported by Sotillo (2000), who found that sentences that were produced in the asynchronous environments contained more complex sentence structures and included fewer errors. Because asynchronous discussions allow students to think and edit their own writing before they post it, they tend to post more precise sentences with well thought out ideas (Sotillo, 2000). Furthermore, Dr. Ish was initially afraid of spending a lot of time reading students' threads. However, because he enjoyed reading them, he found time. Dr. Ish enjoyed reading students' threads because of their in-depth ideas. They were able to develop their ideas and gain more knowledge to write by participating in online discussions. This aspect may be related to Elder and Paul (2006). They suggest that students write better when they develop in-depth ideas. This shows that interaction is a significant element for literacy development and supports those researchers who have maintained the importance of interactions (Forman & Cazden, 1986; Halliday, 1994; Hull & Rose, 1982; Benbun-Fich, Hiltz, & Harasim, 2005). As Stoehr (1967) emphasizes, including writers' insights in their writing is important and has value—something that a reader wants to read and what Dr. Ish wanted to read.

Another advantage that helped Dr. Ish see the benefits of using asynchronous discussions was that quiet students expressed thoughtful ideas on Discussion Boards

(Weasenforth, Biesenbach-Lucas, & Meloni, 2002). Dr. Ish sometimes found difficulty understanding ESOL students' ideas in the classroom because of their articulation problems, yet he was easily able to understand their ideas when they submitted their thoughts on Discussion Boards. Electronic learning environments fostered more discussion among quiet students than classroom discussions. This result has been supported by Weasenforth, Biesenbach-Lucas, and Meloni (2002), who found that Discussion Boards, because they do not involve the social cues of face-to-face interactions, are much more agrarian, and the physical separation between communicators becomes a social leveler, easing socially-nervous students.

Dr. Ish's perceptional change was similar to the transition shown in a study conducted by Meskill, Mossop, DiAngelo, and Pasquale (2002). In that study, the transitional expert's perceptional changes were reported. The transitional expert had a long teaching experience without using technology. Similarly, Dr.Ish did not see any value in using technology in the early stages of his use. He perceived that using technology only prompted trouble, yet, the transitional expert gradually adopted technology as he received support from a mentor. One and a half years later, the transitional expert successfully integrated technology into his instruction in the same way as Dr.Ish.

Unlike Discussion Boards, Track Changes made a positive impression in spring 2005; thus, Dr. Ish did not express any resistance toward using it then or at any time later. He felt that Track Changes could accomplish what he wanted to do. He believed that it would be efficient, effectively save the students' and instructor's time, and produce better overall learning outcomes. He voiced no perceptions that could be classified as challenges. As a longtime professor of English, Dr. Ish felt comfortable with the editing

functions and opportunities for commentary that Track Changes offered. Learning to

write is an ongoing process that is developmental (Fitzpatrick, 1999) and recursive.

Gentry (2005) describes instructional techniques that support emerging writers, all of

which can be included under the title *process writing*. Valdes (1999) points out that

second-language learners particularly benefit from process writing rather than scripted

writing. Included under process writing is the activity of scaffolded writing. This is a

way of providing necessary support for a learner to complete a task at a higher level than

the learner's current level of functioning. As Dr. Ish used Track Changes, he scaffolded

writing for his students. He was most interested in having his students construct their own

thinking/writing. Both the instructor and the students perceived that the interaction they

had using the Track Changes technology seemed to benefit students' skills (Valedes,

1999).

Summary of Question Two

    Dr. Ish's perceptional change was explained by the following four elements (a)

emerging resistance, (b) shifting objectives for using technology, (c) reactions to

handling problems and (d) becoming open-minded to technology. The instructor's

perceptions evolved from showing resistance to becoming more flexible. Dissatisfaction,

irrelevance, and lack of compatibility initially shaped Dr. Ish's resistance to using

technology in his course. Later, his attitudes as an "adaptive expert" toward problems

(Brandsford, Derry, Berliner & Hammerness with Beckett 2005, p 49), helped him to

acquire more flexible skills and to construct his ideas and change his beliefs. The most

fundamental challenge that Dr. Ish had was overcoming concerns about changing his

traditional course format to find positive value for students' learning using technology.

Question Three: Key Factors

As described in Chapter Four, there were five key factors that influenced Dr. Ish's decisions regarding his adoption of technology: discovering advantages, overcoming uncertainty and increased workload, making a commitment to using technology, and accessing mentor's support. In the following four sections these key factors are discussed in relation to other work in the field and synthesized with the broader findings.

Discovering Advantages

Importance of gaining appropriate knowledge.

Several researchers have emphasized the importance of knowledge creation (Fullan, 2001; Rogers, 1995). Knowledge creation begins when the individual notices the existence of innovation and expands an understanding of how the innovation works (Rogers, 1995). In this case study, there were two types of knowledge creation: unsolicited and solicited. An illustration of the first type is when the mentor delivered new knowledge without being asked for it. She saw a need for Dr. Ish to learn a skill or procedure and took action. Still, Dr. Ish had to accept the knowledge for it to be a gain in technology understanding.

The second type of knowledge creation is solicited and is probably more powerful. In this case, Dr. Ish pursued the new knowledge because he recognized, without prompting from the mentor, that he needed to learn certain information. Even though the mentor stated that using technology would work, Dr. Ish himself, as the one who had designed the curriculum and delivered the instruction with certain objectives in mind, needed to see the students' outcomes and determine the effectiveness of technology within his own classroom.

Rogers (1995) states that the user may reject the adoption of technology if he or she does not have a sufficient level of knowledge before the trial. Since Dr. Ish decided to use technology in the spring semester, he had appropriate knowledge to try it out. Yet, Dr. Ish may not have fully understood the values of implementing technology just by receiving information from a mentor. Thus, he demonstrated "a surface-level change" in the spring semester (Evans, 1996, p. 78). If educators do not fully understand the innovation, they may accomplish "a surface-level change" (Evans, 1996, p. 78). Therefore, knowledge creation prior to the trial is important.

It is also important that an individual has the opportunity to actively discover and develop the necessary *deep* knowledge. Dr. Ish was not able to develop the category of *Knowledge Creation* and *Planning* in October and November of 2005 from Level IV A: Routine to Level IV-B: Refinement because he was not able to identify how to use technology to enhance his students' learning. Knowing the ways to increase students' cognitive effects using technology was one of the key factors. Dr. Ish had to discover in a real setting, rather than simply having information from the mentor that the technology would transform students' thinking, students' skills, and his own thinking and skills.

Importance of compatibility.

This study determined that identifying values of using technology was one of the key factors. Relative advantage is one of the key elements that Rogers (1995) suggests. As Wetzel (2001) and Grant (2004) stated, Dr. Ish discovered the technology's advantages only when they were compatible to his teaching style and course design and applicable to his contextual use. For example, while the limited exercises recommended by the behaviorist approach, such as online quizzes, could save his time, he did not believe that

these types of practices could help students to become better writers. In contrast, to promote constructivist learning, the instructor had students submit papers electronically so that he could use the Track Changes function in Microsoft Word to provide feedback that would stimulate a student's revision and, thus, the construction of new ideas and concepts regarding the process of writing. In his established course design, students were required to make revisions, but feedback was handwritten, making comments and suggestions for revision somewhat difficult to read on the hard copy. Thus, Dr. Ish found that using Track Changes allowed students to look at their written text, read commentary from the instructor, and make revisions to their writing under the supervision of the instructor. The original document, the instructor's feedback, and the revised document were all part of the same file and could be accessed equally by the student and by the instructor. Moreover, the instructor found that he did not have to change his existing rubric for giving feedback on students' papers, but could merely apply it to the Track Changes comments, thus allowing him to reap the rewards of implementing new technology into his instruction without dramatically changing his traditional course design. Therefore, in this case, it was easier for the instructor to recognize advantages that were compatible with his pre-existing course. This emphasis on compatibility at the beginning of the change process may be true for other cases of technology integration.

Overcoming Uncertainty and Increased Workload

Collinson and Cook (2000) state that many instructors do not want to work more than required, as they already have a great deal of work. Finding the time to learn new knowledge or skills in addition to their current duties is difficult. In fact, Dr. Ish

emphasized this aspect in the early stages of the study. Furthermore, he stressed that he did not want to waste his time, as Collinson and Cook (2000) described.

When using instructional technology is a new practice, some teachers find that the advantages are not always clear (Rogers, 1995). In fact, overcoming issues of uncertainty and increased workload were the factors that most influenced Dr. Ish's adoption of technology. One of the biggest issues was that Dr. Ish was willing to put effort into using technology towards the goal of greater efficiency, but he often had doubts about whether or not his use of LMS was correlated to increasing student outcomes, and if the same outcomes could be produced without technology.

Thus, it is imperative that instructors discover clear evidence of the effectiveness of using technology so that they are better equipped to make decisions about how to use technology (Way, 2001). In this case, Dr. Ish sought concrete evidence that technology enhances students' learning. Illustrative of this was the fact that the instructor determined that students increased their writing proficiency by using the Track Changes. Consequently, he gladly integrated that technology into his course.

Making a Commitment to Using Technology

Fullan (2001) states the importance of fostering commitment. Commitment was also one of the key factors related to Dr. Ish's use of technology in multiple ways in his course. Although he previously tended to give up easily when faced with technology that was not functioning or that he perceived was not functioning, Dr. Ish eventually was successful because he persevered.

Dr. Ish wanted to protect himself as a non-active user of technology by saying that he was not adept at using technology. However, eventually, in the fall semester, he no

longer became angry when he faced problems in using technology. Instead, he was often able to fix problems by himself. He may have learned that obstacles are inevitable, but, as his mentor suggested, he should continue to try to use technology if he could discover and receive advantages from it.

By the conclusion of this research project, Dr. Ish had identified, in discussion with the researcher, important benefits of technology and so he continued to update his use and knowledge of it. This indicates that he did not easily give up even when faced with software or hardware obstacles. By this point, he was committed to using technology.

The commitment can be explained by what Argyris (2000) calls external commitment. Since he became a participant of this study, the research itself helped him foster commitment. He wanted to show his progress to other professional colleagues. In addition, he displayed internal commitment (Argyris, 2000) as he wrestled with how to integrate technology in profitable ways into his professional life. He was self-motivated based on this internal commitment to seek many possible ways to use technology for his own benefit as a teacher and for the benefit he observed in his students.

Also, experiences—both positive and negative—helped reinforce his commitment to using technology. First, when Dr. Ish used Track Changes, the positive experience helped him foster a commitment to further use of technology. However, when he first used Discussion Boards, he perceived failure and he became more focused on seeking better ways to use the Discussion Boards for the following semester. The unsuccessful experience specifically motivated Dr. Ish to seek better ways to use technology. This may also be related to what Argyris (2000) calls internal commitment. Because of strong internal commitment, when Dr. Ish encountered conflicts between the decisions that he

made and the actual results, he re-examined his decisions rather than abandoning the goal of integrating technology.

Furthermore, the mentor facilitated his motivation to commit to implementing the innovation and the change itself, by providing appropriate advice and support to counter perceptions of failure as well as to guide him to more effective use of instructional technology. The mentor's support is discussed in the next section.

Accessing Mentor's Support and Mentoring Techniques

Importance of having emotional and technical support.

As several researchers suggest, having a mentor can establish an environment in which each instructor can receive not only technical, but also emotional support (Fullan, 2001; Hargreaves, Earl, Moore, & Manning, 2001).

Fullan (2001) suggests that teachers face dips, which are the lessening of behaviors and depressing of emotions in relation to innovation. The two types of dips are psychological fear toward change and lack of knowledge and skills to implement change. Furthermore, Hargreaves, Earl, Moore, and Manning (2001) suggest that emotional investment is important to a teacher's efforts to implement changes. They emphasize that one of the key aspects of successful change is having an impact on the teacher's emotional goals and supporting their emotional efforts in multiple ways.

Mentoring is one way to combat the dips that teachers face when approaching innovation. At the end of May 2005, Dr. Ish was interested in using technology during his summer course for graduate students; however, he later decided not to use any technology for the summer course. This may have been related to the types of emotional issues described above. Although he had basic technological skills and institutional

technical support was available, he may have felt insecure using technology when his mentor was out of town. It was not easy for Dr. Ish to discover the appropriate ways to utilize technology that would fit his summer course by himself. Therefore, having a mentor seems to be a key element.

Darling-Hammond, et al. (2005) state the importance of having an opportunity to connect practice to expert knowledge. Mentoring can be an important catalyst. In this case study, providing appropriate support was important to maintaining Dr. Ish's interest in and willingness to use technology. During this study, the mentor and the technology support staff at the institution were usually available. Specifically, the mentor gave Dr. Ish advice about how to incorporate technology into his course design and teaching philosophy. Having a mentor who provides close assistance to an instructor is significant (Holahan, Jurkat & Friedman, 2000; Darling-Hammond, et al., 2005).

Fostering ownership.

Wetzel (2001) suggests that fostering ownership of the use of instructional technology can reduce one's concerns. This seemed to be true in this case study. Dr. Ish liked the ownership approach because it facilitated the instructor's control of his experiences. Even if the individual encounters conflicts in his decision to adopt the innovation, he or she will try to re-examine his or her decisions and may change a previous decision as long as he is in control (Rogers, 1995). Because the mentor respected Dr. Ish's decisions, Dr. Ish felt that he was directing the situation. Even though an instructor may decide to use a certain method that the mentor does not support, he may reflect and re-examine his decision, and later follow the mentor's advice for the next try, as did Dr. Ish when using Discussion Boards.

Facilitating ownership seems to be especially important in the case of a veteran instructor. A corollary of supporting the instructor's ownership is that the mentor should take an indirect approach. Rather than directing the innovation or dictating how technology should be integrated, the mentor was more successful in suggesting, passively watching, and being a sounding board for the instructor.

Appropriate types of support.

Rogers (1995) states that innovation that is more compatible, trialable, observable, and less complex will be adopted more quickly. One of the important roles of a mentor in maintaining an individual's willingness to integrate technology is to help increase *compatibility,* some degree of *trialability* and *observalibility,* and lessen complexity. When Dr. Ish faced the dilemma of how to use technology, it was very hard for him to use it. In this case study, the mentor gave advice about how technology could be most compatible with his current course design. The advice is very critical and did not require him to change his course design to any great extent; thus, he maintained his active involvement with technology.

Because an instructor's concerns change as his or her Levels of Use increase (Hall et al., 1975), a mentor should provide appropriate support at each stage. In the early stages, an instructor tends to focus on logistical issues; thus, a mentor should give more technical support at the beginning stages of technology integration. But, at the later stages, mentoring can be even more productive. Even though an instructor has acquired basic knowledge and skills, he still may greatly benefit from a mentor who is a sounding board for discussions about the pedagogical impact of technology, especially as it relates to improving students' outcomes. There may need to be two types of mentors for the two

stages of technology integration development: basic technical assistance and pedagogical impact. Alternatively, one mentor—who is sensitive to the varying needs of the different stages and who is adaptable—can provide appropriate assistance. The importance of ongoing and long-term support by a mentor was demonstrated in this study.

The relationship among key factors is illustrated in *Figure 4*. Each factor is closely related to one another. An instructor may be uncertain about how new instruction would work, and what advantages he or she could receive. The instructor may also be unsure about increased workload that may be required as he or she implements new technology. In this case, a mentor should provide support to help the instructor discover clear advantages. Specifically, helping instructors uncover positive cognitive effects within their students by using technology may be the most powerful factor. Without a mentor, the instructor may revert back to traditional instruction. Furthermore, a mentor may need to help the instructor foster commitment to using technology. This commitment is a self-extending system. It leads to continuity of use of technology, allows the instructor to discover advantages, and helps him or her implement new instruction.
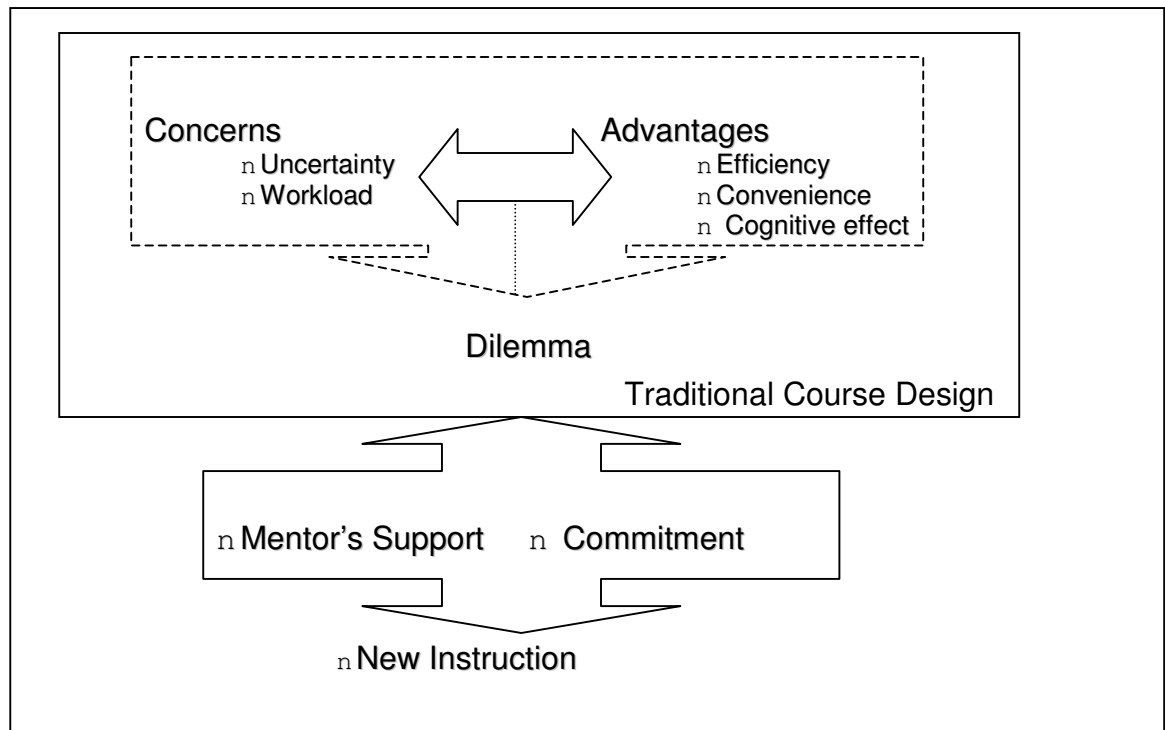
Figure 4. Relationships among Key Factors

Summary of Question Three

This section discussed the key factors that influenced Dr. Ish's adoption of technology. In the first section, the importance of discovering advantages was emphasized.   Specifically, there was an exploration of the key elements of gaining appropriate knowledge and having compatibility with teaching philosophy and traditional course format. Next, challenges—overcoming uncertainty and increased workload— were discussed. Finally, a strong commitment to overcoming problems and having emotional and technical support from a mentor was important. It is essential for a mentor to foster ownership of the process of technology integration. Also, a mentor should provide two stages of mentoring: basic technical assistance and exploring pedagogical impact, both in the short-term and long-term journey towards technology integration.

Conclusions

The case study method was ideal for the purpose of revealing key elements of technology integration. The subject of this case was an informant with great depth because he was a veteran instructor of both English language and international students. He was reflective and articulate about his reflections. Still he had a long journey—as described in this study—as he adopted a new instructional method. His journey emphasizes that teaching innovation, especially technology integration, does not occur instantly but requires substantial time. It is not a linear path, and necessitates certain support mechanisms. One of the most helpful supports is a professional mentor.

Although one believes that current instruction works well, technology integrated instruction may produce higher learning outcomes—as perceived by the instructor—than one may have expected. In this case, Dr. Ish noted that his students had more interaction, more complex written language, and increased reading comprehension insights because of the opportunities provided by technology.

In conclusion, this study can be useful in the field of education in both the present and the future. Current instructors may be protective of their instruction; they may want to continuously use current familiar technology even though new instructional technology emerges; they may not want to change course design or formats. They may need to go through a process similar to Dr. Ish's journey. It is not guaranteed that current technology skills and knowledge can help an instructor easily implement advancing technology in the future. Instructors may need to gain appropriate knowledge and discover advantages. Most important, if one has an attitude that actively seeks more effective instruction and better cognitive effect, one may be able to adopt any innovation

in educational technology. This study was a snapshot in the year 2005. Yet, findings of this case study will be useful whenever new technology is developed in the future.

Recommendations

Based on Dr. Ish's experience in adopting new forms of instructional technology in his course, Dr. Ish and the researcher have made several recommendations. These recommendations include several critical elements; unsurprisingly, these elements are similar to those that many other researchers have suggested.

Based on Dr. Ish's experience in adopting new forms of instructional technology in his course, Dr. Ish and the researcher have made several recommendations. These recommendations include several critical elements; unsurprisingly, these elements are similar to those that many other researchers have suggested.

A mentor should suggest that an instructor use a *variety of technology* depending on different learning content areas, objectives, types of students, and teaching philosophies. Instructors may not find any advantage in a certain type of technology, but they may find benefits in other technology. Consequently, the mentor is charged with providing a panorama of what is available in instructional technology.

Instructors may not always make straight progress toward adoption. They may remain at the same level or may even regress. They may need several cycles to gain stable adoption. Instructors may, at times, face problems or dilemmas. Thus, making instructional change may not occur instantly; it *requires time*. Professional development for staff, administrators, and the instructors themselves should be

supportive of allowing time for adoption of innovation, especially technology integration.

Mentors, colleagues, and administrators should encourage any instructor who is a novice in technology integration not to give up. Even if it produces unsuccessful results at first, the instructor should re-evaluate and keep seeking better ways of using technology. In such cases, mentors can also give explicit support towards the goal of having the instructor *commit* to using technology.

One challenge for a mentor is that he or she may want an instructor to quickly make progress; however, a mentor needs to respect the instructors' experience and teaching philosophy. Specifically, *veteran instructors' experiences and teaching philosophy* are very important for them, so that changing a traditional, well-developed course creates uncertainty. The mentor must take the time and effort to understand instructors' perspectives; this could lead to a breakthrough in encouraging them to use technology.

If a mentor pressures instructors to dramatically change their course design, they may decide to completely stop using technology because they may not believe that new instruction will actually work or be a benefit. Thus, a mentor initially needs to respect instructors' experience and teaching philosophy to maintain their willingness to use it. It is important to facilitate the instructor's *ownership* of the technology and individual discovery of the advantages of using technology, instead of the mentor defining these for the instructor.

Instructors should keep using technology based on the decisions that they make while receiving advice from a mentor and feedback from students. However, if they

use technology with only a little bit of adjustment to the original course design, they may perceive that new instruction with technology is not productive in the early stages. Although a professor may be inclined to stop using technology because of perceived unsuccessful experiences, these junctures are ripe with opportunity for good mentoring. Again, the mentoring should not be invasive but facilitate the instructor's ownership of his/her own course objectives and of the technology itself. In many instances, if professors continue to use technology, they will have a better chance to confirm the mentor's advice, and understand why the mentor recommended one method and not the other. Finally, they will trust the mentor's advice and may become more receptive to future advice. Therefore, providing *long-term support* is essential. As this study, as well as several others, indicates, as an instructor's concerns shift as his or her Levels of Use (Hall et.al.., 1975) increase, the mentor should similarly shift her or his main focus. A mentor should give individualized support to make a course work. A mentor should distinguish between help given that is of a technical variety and help that is supporting an instructor's new understandings of teaching and learning pedagogy. Therefore, there may need to be *training for mentors* in how to best support instructors.

Future Research

This investigation may be valuable to future studies. Similar studies should be conducted for one to six cycles of technology use. In this way, the researcher can see how and when Levels of Use become stable and perceptions become consistent. This study focused on Track Changes and CMC. For future studies, the investigations will focus on other forms of technology.

Moreover, whereas this case study involved a situation in which the instructor was satisfied with his traditional course design and student outcomes, other research could highlight teaching circumstances in which the instructor is not satisfied with the traditional course format or student outcomes and how technology integration evolves in that case. It is likely that in the latter case, technology integration will be easier. It would be useful to compare the two situations.

This study focused on an instructor who had very limited use of technology in his coursework. In the course of the experience that he had as described in this study, Dr. Ish discovered unexpected positive learning outcomes. Thus, a follow up study would be very worthwhile that investigates whether instructors, similar to Dr. Ish, who have had this type of positive experience with technology, continue to adopt newer technologies.

Examination of mentoring techniques may be valuable. In this study, the mentor tried to respect the experienced instructor's decisions. Investigating two types of mentoring techniques: one which provides more ownership to an instructor and a passive approach by the mentor and one in which the mentor is more director may be helpful in adding to our research base on this crucial support for technology integration or for teaching innovation in general.

Furthermore, further research that focuses on students in second language instruction would be helpful. Specifically, it would be useful to examine what levels of ESOL students are best matched with what technology. For example, do beginning language students benefit most from synchronous or asynchronous discussion forums?

APPENDICES

APPENDIX A-Institutional Review Board Documents

TOWSON
UNIVERSITY

EXEMPTION NUMBER: 06-0X17

To:	Junko Handa
From:	Institutional Review Board for the Protection of Human Subjects Larence Becker, Member
Date:	Wednesday, August 31, 2005
RE:	Application for Approval of Research Involving the Use of Human Participants

Office of University
Research Services

Towson University
8000 York Road
Towson, MD 21252-0001

t. 410 704-2236
f. 410 704-4494

Thank you for submitting an application for approval of the research titled,

An experienced instructor integrates technology into a college level ESOL writing course: An instructor's perception of technology

to the Institutional Review Board for the Protection of Human Participants (IRB) at Towson University.

Your research is exempt from general Human Participants requirements according to 45 CFR 46.101(b)(1). No further review of this project is required from year to year provided it does not deviate from the submitted research design.

If you substantially change your research project procedure, please notify the Board immediately.

We wish you every success in your research project.

CC: B. Laster
       File

TOWSON UNIVERSITY

Junko Handa
Graduate Student in Instructional Technology
Towson University
8000 York Road 21252
TEL: 410-704-5911
jhanda@towson.edu

Dear Student,

My name is Junko Handa, and I am a graduate student in the Instructional Technology program at Towson University. I am conducting a study to investigate the instructor's perceptions toward technology.

To conduct this study, I will be gathering data from the instructor as well as students in the English 102 course. One way I will be doing this is monitoring online discussions. In addition to weekly interviews with the instructor, I will retrieve and analyze participants' threads from online discussions and review the instructor's responses. I will also interview some of the participants based on the content of their data and their willingness to be interviewed. These interviews will be audio recorded. Finally, the content of the coursework such as journals, essays, action plans, and the final exam paper that participants submitted to the instructor may be used for this study.

In order to be eligible for this study, volunteers must:

- be 18 years of age or older
- be enrolled in English 102 for ESOL students

Participation in this study is not connected with any grades– it is voluntary. If you decide that you no longer wish to participate in the study, you can let the researcher know, and your face-to-face class discussions and online discussions will not be used. All data will be kept anonymous and confidential. All collected data will be kept in a locked file cabinet.

University policy requires your written consent to participate. If you have any questions regarding the study, please contact me at (410) 704-5911. If you prefer, you may contact Dr. Pat Alt of the Office of University Research Services (her office oversees all research at Towson University) at (410) 830-2236. If you are willing to participate, please detach and return the signed consent form to me at your earliest convenience.

Thank you,

Junko Handa
Graduate Student

TOWSON UNIVERSITY

Junko Handa
Graduate Student in Instructional Technology
Towson University
8000 York Road 21252
TEL: 410-704-5911
jhanda@towson.edu

Dear Instructor,

My name is Junko Handa, and I am a graduate student in the Instructional Technology program at Towson University. I am conducting a study to investigate the instructor's perceptions toward technology.

To conduct this study, I will be gathering data from the instructor as well as students in the English 102 course. One way I will be doing this is monitoring online discussions. In addition to weekly interviews with the instructor, I will retrieve and analyze participants' threads from online discussions and review the instructor's responses.

The weekly interviews with the instructor will be audio recorded. Selected students will also have their interviews audio recorded. Coursework such as journals, essays, the course action plan, and the final exam paper may be analyzed for the purposes of this study.

Furthermore, I would like to use existing data such as email correspondence between the instructor and the researcher, students' course feedback and past final exams for comparison purposes. These documents will be used for research purposes only and their content will be kept strictly confidential.

If at any time during the study you decide that you no longer wish to participate, you can let the researcher know, and your data will not be used. All data will be kept anonymous and confidential. All data will be kept in a locked file cabinet.

University policy requires your written consent to participate. If you have any questions regarding the survey, please contact me at (410) 704-5911. If you prefer, you may contact Dr. Pat Alt of the Office of University Research Services (her office oversees all research at Towson University) at 410/830-2236. If you are willing to participate, please detach and return the signed consent form.

Thank you,

Junko Handa
Graduate Student
Department of Instructional Technology
Towson University

APPENDIX B- Sample Course Syllabus

WRITING FOR LIBERAL EDUCATION

ENGL 102.017

A syllabus is the professor's attempt to put in writing information that explains the course, assignments, grades, and procedures. As we all get busy during the semester, the syllabus will be an important reference to keep us organized. Read it carefully before you ask questions about assignments and procedures. Do be sure to ask about any information here that is unclear to you so that you will be able to complete the assignments correctly and on time. Remember that you are responsible for turning assignments in on time and in the correct format.

Office Hours: Monday and Wednesday 1:00-2:00; Tuesday/Thursday 1:00-2:00

Books: Quinn, Daniel. *Ishmael*. New York: Bantam/Turner Books, 1995.
Hacker, Diana. *A Writer's Reference, 5th edition*. Boston: Bedford Books, 2003.

Course: This course introduces students to the skill of writing. Concentration is on the basic organizational approaches to making a point in formal academic style. Essays and journals—both in and out of class—classroom discussions, individual conferences, and a short research paper will give you practice in the communication skills that will be needed in your university studies and throughout your professional careers.

The course will also develop the observation skills that lead to a natural creation of thesis and well-developed compositions. Students will increase knowledge of visual/non-print texts, language and culture, and non-verbal communication.

In order to make concrete improvement in grammar and spelling, which have a powerful impact on the effectiveness of written work, each student will consult with the teacher to identify specific areas to improve. The final grade will be influenced by the improvement the student makes.

Grades: **<u>Students must receive a 'C' grade to pass this course</u>**.
'C-' is not a passing grade. This course can be repeated only once without the permission of the Academic Standards Committee. The total number of points for course grades is 300. The course grade will be determined according to the following scale

Course Grade	Points Needed	
A	280-300	
A-	270-279	
B+	260-269	
B	250-259	
B-	240-249	
C+	230-239	
C	220-229	**<u>Grades above this line are passing</u>**
C-	210-219	
D+	200-209	
D	180-199	
F	179 and below	

The chart on the following page can be used to record your grades. It is always a good idea to keep your own record to ensure that you get the grade you have earned.

Using material that is written by someone else and presenting it as your own is plagiarism. Plagiarism will seriously affect your grade for the assignment and your Individual Involvement/Responsibility grade.

If you need accommodation due to a disability, please make an appointment to see me and bring a statement from Disability Support Services authorizing your accommodation. Students will be expected to attend class regularly and to maintain professional and courteous demeanor in class. Cell phones **will** be turned off before entering class so as not to disrupt the class session.

Students will be using the Online Blackboard program to submit assignments and participate in some online discussions. Learning to use Blackboard to accomplish assignments on time and meet the assignment requirements will be part of the grade assigned to the assignment.

Grade Chart

Assignment		Points Assigned	Points Earned
I.	Essays		
	Essay I	40	_____
	Essay II	50	_____
II.	Observations		
	Obs 1	10	_____
	Obs 2	10	_____
III.	Ishmael Journals		
	1	10	_____
	2	10	_____
	3	10	_____
IV.	Ishmael Discussions (5)	20	_____
V.	Research Paper	50	_____
VI.	Action Plan	10	_____
	Improvement on Action Plan	10	_____
VII.	Involvement	10	_____
VIII.	Homework quizzes	20	_____
IX.	Final Examination	40	_____
		Total 300	

 * 5 Extra Points for 100% attendance
** Students may earn up to 10 additional extra credit points by doing additional assignments approved by the professor.

Important Procedural Information:

If you are confused about any assignments, call, make an appointment, or e-mail me before the assignment is due. I'll be glad to help.

Absences and excessive lateness will affect the Individual Responsibility/Involvement grade**. If you are late three times, it will be counted as one absence**. This is not a punishment; when a student arrives late, it can create distraction, even confusion in the class. University work prepares us for the professional world where arrival late for meetings can have a negative effect on your boss's opinion of you, and therefore, your chances for success, promotion, and pay increases.

Remember too, that students who have perfect attendance will get an additional 5 points. If you arrive late for a class, it is **your** responsibility to tell me before we leave class that you are present. Otherwise, you will be marked absent.

If you know you will be absent, arrange in advance to keep up with all assignments. If you are absent, contact me by phone, e-mail, or in person to make sure that you are aware of any changes in the schedule and to arrange to turn in assignments before the next class.

REMEMBER THAT IF YOU HAVE A VALID EXCUSE, I WILL ACCEPT LATE PAPERS THAT ARE TURNED IN BEFORE THE NEXT CLASS. IF YOU HAVE A PROBLEM, CONTACT ME AND WE CAN MAKE OTHER ARRANGEMENTS.

We cover many different assignments and concepts in the first few weeks, and it is very easy to get confused about homework or other assignments. If you don't bring it to my attention, I will assume that you have understood.

Unless otherwise stated, all assignments are due at the beginning of class to receive full credit.

Information on specific assignments:

Essay Assignments:

Each of the two major essays will be graded in three parts.

- n The outline will be worth 10 points
- n The draft will be worth 10 points
- n The final revision for Essay I is worth 20 points. Essay II is worth 30 points.

Good writers spend time organizing their ideas and writing drafts (often more than one). Thus, the outlining and drafting are a substantial part of the grade for an essay.

Ishmael Assignments:

The discussions on the readings are designed to help students understand the issues presented in the book and prepare them for the journal writing assignments. To prepare for the discussions, read the assigned pages more than once. Do not be concerned about understanding everything. **Come to the discussions with questions about the reading or reactions to the ideas in the reading (i.e., agreement/disagreement or any thoughts that were stimulated by the ideas).** Because you will be expected to participate in class discussions in many of your classes in your university studies, you can gain valuable practice and a comfort level through these discussions. The discussions are graded based on the number of times you participate more than the 'brilliance' or 'genius' of your comments or questions.   Some discussions will be done in class; others will be in chat sessions on Blackboard—the computerized course program.

The journal writing assignments (Journals 1, 2, 3) are short essays and are your reactions/opinions/ideas that were stimulated by the reading and discussions. There is no 'correct answer'. The **primary objective of the journal is for you to practice expressing difficult and complex ideas**--something that you will be required to do throughout your university and professional careers. Use Spell Check before you send the journals to me by email.

The journals must be at least three computer screens long—about a typewritten page. Longer journals tend to receive higher grades, but quality of ideas and clarity are also important. Although grammar and spelling are not heavily emphasized, if the journal is difficult to read because of grammar/spelling errors, the grade will be affected.

What I'm looking for in the journals are your actual reactions to the reading, ideas that show that you have read the material and thought about it. You can write about parts of the book that confused you. Just offer your interpretation and guesses about what it meant. **Avoid simply summarizing the reading. Comment on its effect on you.**

Observation <u>Assignments</u>:

In order to be a good writer, you must have something worth saying. We will work very hard to develop a skill which enables the mind to think creatively and discover meaningful ideas about almost any subject: the skill of **Observation**. As you will see in our exercises and practice, observation is a very precise and stimulating process—much different from the way you may think of it now. It will help you come up with interesting ideas, but it will also quite unconsciously lead you to use a different part of your mind in drawing on vocabulary and language. You will write short essays based on observation.

If you work very hard on this set of assignments and activities, you will discover a tool that actually changes and improves your ability to write meaningful, stimulating, and persuasive papers and prepares you for the professional world as well. You will also see that it quickly builds your confidence as a writer.

Research Paper:

Because you will be required to write research papers for many of your courses in the university, we will take you through the process of writing a quality paper. This assignment will clarify what is expected in a research paper in an American university and how to write a good one. Even if you have written papers before here in the United States, you will find that the strategies and suggestions will improve your skill in this type of assignment. A <u>separate, detailed handout</u> will be distributed in class.

Final Exam:

For the final examination you are going to write an essay on what you learned during this semester. You will have two hours to organize your ideas, write a well-developed essay which is grammatically sound with few spelling errors. You may bring an English dictionary, but no translation dictionary. The grammar/spelling errors that we have identified throughout the course will be an especially important part of the final exam grade, reflecting your progress in overcoming basic or distracting errors. You can best prepare for this exam by keeping notes on what you learn as we proceed through the semester. Then, just before the Final Exam, you can organize/outline the notes.

The final examination gives you a chance to demonstrate how much you have learned during the semester and has a strong influence on your course grade. Students who keep notes throughout the semester on what they have learned usually do well.

__Action Plan__:

Your improvement grade will be based on how much you improve in specific areas   It is not realistic to try to eliminate all your grammar or spelling errors. What we can do is focus on the most significant errors and then reduce the number of errors.

The Action Plan (worth 10 points) is your attempt to focus on 3 or 4 grammar, spelling, or other problems that you have when you write.   The purpose of the Action Plan is to find a way to reduce or eliminate mistakes that you continue to make.   Instead of promising "to try harder the next time", you will:

1.) List the problems you are going to work on
2.) Give examples of the problems from your writing
3.) Provide specific ways to do something that actually improves your skill.

Hard work on your Action Plan also influences your Individual Involvement/Participation grade. The Final Action Plan is due February 16th, but you can submit it or make an appointment with me for feedback or help before it is due.

__Involvement__

Learning to write well requires energy, commitment, and a cooperative effort between the teacher and student. It is very important to remember that writing does not take place in isolation. <u>Whenever you give someone something in writing (whether it is a teacher, a boss, or a potential customer), the reader reads the material with whatever image of you has been created through personal contact.</u> So, for example, if the teacher or boss sees you as a highly motivated, intelligent, thoughtful person, then he/she will begin to read your writing with a positive, open mind. Active involvement and participation creates a positive image of you that influences the reader in accepting your written message.

Involvement can be measured in many ways.

Coming to class on time
Preparing well for class discussions,
Seeking extra help
Asking/responding to questions in class,
Bringing interesting information or writing related to the points covered in class
Active participation during conferences with the teacher

Assignment Schedule ENGL 102.017

Monday	Wednesday
	Jan 26 Email 1 Personal Info Friday, 5:00 PM
Jan 31 Discuss syllabus Observation; Email 2 due 9:00 PM	Feb 2 Introduction to Blackboard Discuss Extra Credit
Feb 7 Purpose and Audience **HW, colon/semicolon due**	Feb 9 Conferences: (Bring printed email messages and calendar)
Feb 14 Conferences: (Bring printed email messages and calendar)	Feb 16 Begin preparation Essay I **Action Plan Due**
Feb 21 **Outline, Essay I due**	Feb 23 **Observation I in class**
Feb 28 Conference—bring Essay I draft	Mar 2 Conferences—bring Essay I draft
Mar 7 Begin Research Paper preparation	Mar 9 Ishmael Discussion 1, pp. 3-46
Mar 14 Class in Library, Room 526 Bring Topics **JNL I pp 3-46 emailed by 9:00 PM**	Mar 16 Ishmael Discussion 2, pp. 49-91 **BB** **JNL II pp 49-91 email 10:00PM; Topic/Bibliography email BB Fri 5:00**
Mar 21 **Spring Break**	Mar 23 **Spring Break**
Mar 28 Research Paper Preparation	Mar 30 Ish Disc 3, pp. 95-148 **R. P. Outline**
Apr 4 Ishmael Discussion 4, pp. 151-207 **BB**	Apr 6 Revision and Editing **JNL III emailed by 9:00 PM**
Apr 11 Begin Essay II prep;**OBS II in class** **R. P. Draft sent to Blackboard**	Apr 13 Essay II workshop **HW Paraphrasing**
Apr 18 **Essay II Outline due**	Apr 20 Essay II workshop
Apr 25 Conferences Essa**y II Draft**	Apr 27 Conferences **Essay II Draft**
May 2 Ishmael Discussion 5	May 4 **R.P. Final Copy due**
May 9 **Essay II due**	May 11 Grammar/Spelling Quiz

Final Examination: Tuesday, May 17, 12:30-2:30

ENGL 102.017
First Assignment

Email to me by Friday, Jan 28th, 9:00 PM, a one-page essay (don't just list answers) covering the following:

1. Personal background:

    Country and First Language
    Major (if not sure, give your best guess)
    Interests/Hobbies
    Live on or off campus
    Any problems with transportation or learning that I
    need to know about

2. Your attitude toward English:

    Do you like to write? Why?
    Do you dislike writing? Why?
    What do you want to learn/improve this semester? Be
    specific.
    What is your most difficult problem in English? Be
    specific.

3. After reading the syllabus:

    Is there anything that isn't clear?
    Do you have any concerns about the work?
    Do you see any errors?
    Why is it so important to read syllabuses carefully in
    the first few days of the class?

Fall 2005
Dr.[Ish]

WRITING FOR LIBERAL EDUCATION

ENGL 102.419

A syllabus is the professor's attempt to put in writing information that explains the course, assignments, grades, and procedures. As we all get busy during the semester, the syllabus will be an important reference to keep us organized. Read it carefully before you ask questions about assignments and procedures. Do be sure to ask about any information here that is unclear to you so that you will be able to complete the assignments correctly and on time. Remember that you are responsible for turning assignments in on time and in the correct format.

Office Hours: Monday and Wednesday 1:00-2:00; Tuesday/Thursday 1:00-2:00
Books: Quinn, Daniel. *Ishmael*. New York: Bantam/Turner Books, 1995.

Hacker, Diana. *A Writer's Reference, 5th edition*. Boston: Bedford Books, 2003.

Course: This course introduces students to the skill of writing. Concentration is on the basic organizational approaches to making a point in formal academic style. Essays and journals—both in and out of class—classroom discussions, individual conferences, and a short research paper will give you practice in the communication skills that will be needed in your university studies and throughout your professional careers.

The course will also develop the observation skills that lead to a natural creation of thesis and well-developed compositions.

In order to make concrete improvement in grammar and spelling, which have a powerful impact on the effectiveness of written work, each student will consult with the teacher to identify specific areas to improve. The final grade will be influenced by the improvement the student makes

Grades: **Students must receive a 'C' grade to pass this course**. 'C- ' is not a passing grade. The total number of points for course grades is 300. The course grade will be determined according to the following scale

Course Grade	Points Needed	
A	280-300	
C-	270-279	
B+	260-269	
B	250-259	
D-	240-249	
C+	230-239	
C	**220-229**	**Grades above this line are passing**
C-	210-219	
D+	200-209	
D	180-199	
F	179 and below	

The chart on the following page can be used to record your grades. It is always a good idea to keep your own record to ensure that you get the grade you have earned.

Using material that is written by someone else and presenting it as your own is plagiarism. Plagiarism will seriously affect your grade for the assignment and your Individual Involvement/Responsibility grade.

If you have special needs, tell me in the first week. I will do what I can to accommodate you.

This course cannot be repeated more than once without the permission of the Academic Standards Committee.

Grade Chart

	Assignment	Points Assigned	Points Earned
IV.	Essays		
	Essay I	40	_____
	Essay II	50	_____
V.	Observations/Essays		
	Obs 1	10	_____
	Obs 2	10	_____
VI.	Ishmael Journals		
	1	10	_____
	2	10	_____
	3	10	_____
IV.	Ishmael Discussions (5)	30	_____
V.	Research Paper	50	_____
VI.	Action Plan	10	_____
VII.	Course Involvement	10	_____
VIII.	Homework quizzes	20	_____
IX.	Final Examination	40	_____

Total 300

* 5 Extra Points for 100% attendance
** Students may earn up to 10 additional extra credit points by doing additional assignments approved by the professor.

Important Procedural Information:

> **If you are confused about any assignments, call, make an appointment, or e-mail me before the assignment is due. I'll be glad to help.**

Absences and excessive lateness will affect the Individual Responsibility/Involvement grade. If you are late three times, it will be counted as one absence. This is not a punishment; when a student arrives late, it can create distraction, even confusion in the class. University work prepares us for the professional world where arrival late for meetings can have a negative effect on your boss's opinion of you, and therefore, your chances for success, promotion, and pay increases.

Remember too, that students who have perfect attendance will get an additional 5 points. <u>If you arrive late for a class, it is your responsibility to tell me before we leave class that you are present. Otherwise, you will be marked absent</u>.

If you know you will be absent, arrange in advance to keep up with all assignments. If you are absent, contact me by phone, e-mail, or in person to make sure that you are aware of any changes in the schedule and to arrange to turn in assignments <u>before</u> the next class. <u>REMEMBER THAT I WILL ACCEPT LATE PAPERS THAT ARE TURNED IN BEFORE THE NEXT CLASS. IF YOU HAVE A PROBLEM, CONTACT ME AND WE CAN MAKE OTHER ARRANGEMENTS</u>.

We cover many different assignments and concepts in the first few weeks, and it is very easy to get confused about homework or other assignments. If you don't bring it to my attention, I will assume that you have understood.

Unless otherwise stated, all assignments are due at the beginning of class to receive full credit.

Information on specific assignments:

<u>*Essay*</u> Assignments:
Each of the two major essays will be graded in three parts.

- n   The outline will be worth 10 points
- n   The draft will be worth 10 points
- n   The final revision for Essay I is worth 20 points. Essay II is worth 30 points.

Good writers spend time organizing their ideas and writing drafts (often more than one). So, you see, the outlining and drafting are a substantial part of the grade for an essay.

Ishmael Assignments:

The <u>discussions</u> on the readings are designed to help students understand the issues presented in the book and prepare them for the journal writing assignments. To prepare for the discussions, read the assigned pages more than once. Do not be concerned about understanding everything. **Come to the discussions with questions about the reading or reactions to the ideas in the reading (i.e., agreement/disagreement or any thoughts that were stimulated by the ideas).** Because you will be expected to participate in class discussions in many of your classes in your university studies, you can gain valuable practice and a comfort level through these discussions. The discussions are graded based on the number of times you participate more than the 'brilliance' or 'genius' of your comments or questions.

The <u>journal writing</u> assignments (Journals 1, 2, 3) are short essays and are your reactions/opinions/ideas that were stimulated by the reading and discussions. There is no 'correct answer'. The **primary objective of the journal is for you to practice expressing difficult and complex ideas**--something that you will be required to do throughout your university and professional careers. U<u>se Spell Check</u> before you send the journals to me by email.

The journals must be <u>at least</u> three computer screens long—about a typewritten page. Longer journals tend to receive higher grades, but quality of ideas and clarity are also important. Although grammar and spelling are not heavily emphasized, if the journal is difficult to read because of grammar/spelling errors, the grade will be affected.
What I'm looking for in the journals are your actual reactions to the reading, ideas that show that you have read the material and thought about it. You can write about parts of the book that confused you. Just offer your interpretation and guesses about what it meant. **Avoid simply summarizing the reading. Comment on its effect on you.**

Observation/**Essay** Assignments:

In order to be a good writer, you must have something worth saying. We will work very hard to develop a skill which enables the mind to think creatively and discover meaningful ideas about almost any subject: the skill of **Observation**. As you will see in our exercises and practice, observation is a very precise and stimulating process—much different from the way you may think of it now. It will help you come up with interesting ideas, but it will also quite unconsciously lead you to use a different part of your mind in drawing on vocabulary and language.   You will write short essays based on observation.

If you work very hard on this set of assignments and activities, you will discover a tool that actually changes and improves your ability to write meaningful, stimulating, and persuasive papers and prepares you for the professional world as well. You will also see that it quickly builds your confidence as a writer.

Research Paper:

Because you will be required to write research papers for many of your courses in the university, we will take you through the process of writing a quality paper. This assignment will clarify what is expected in a research paper in an American university and how to write a good one. Even if you have written papers before here in the United States, you will find that the strategies and suggestions will improve your skill in this type of assignment. A <u>separate, detailed handout</u> will be distributed in class.

Final Exam:

For the final examination you are going to write an essay on what you learned during this semester. You will have two hours to organize your ideas, write a well-developed essay which is grammatically sound with few spelling errors. You may bring an English dictionary, but no translation dictionary. The grammar/spelling errors that we have identified throughout the course will be an especially important part of the final exam grade, reflecting your progress in overcoming basic or distracting errors. You can best prepare for this exam by keeping notes on what you learn as we proceed through the semester. Then, just before the Final Exam, you can organize/outline the notes.

The final examination gives you a chance to demonstrate how much you have learned during the semester and has a strong influence on your course grade.

Action Plan:

Your improvement grade will be based on how much you improve in specific areas   It is not realistic to try to eliminate all your grammar or spelling errors. What we can do is focus on the most significant errors and then reduce the number of errors.

The Action Plan (worth 10 points) is our attempt to focus on 3 or 4 grammar, spelling, or other problems that you have when you write.   The purpose is to find a way to reduce or eliminate mistakes that you continue to make.   Instead of promising "to try harder the next time", you will:

   4.) List the problems you are going to work on
   5.) Give examples of the problems from your writing
   6.) Provide specific ways to do something that yields results.

Hard work on your Action Plan also influences your Individual Involvement/Participation grade. The Final Action Plan is due September 21st, but you can submit it or make an appointment with me for feedback or help before it is due.

Involvement

Learning to write well requires energy, commitment, and a cooperative effort between the teacher and student. It is very important to remember that writing does not take place in isolation. <u>Whenever you give someone something in writing (whether it be a teacher, a boss, or a potential customer), the reader reads the material with whatever image of you has been created through personal contact.</u> So, for example, if the teacher or boss sees you as a highly motivated, intelligent, thoughtful person, then he/she will begin to read your writing with a positive, open mind. Active involvement and participation creates a positive image of you that influences the reader in accepting your written message.

Involvement can be measured in many ways.

> Coming to class on time
> Preparing well for class discussions,
> Seeking extra help
> Asking/responding to questions in class,
> Bringing interesting information or writing related to the points covered in class
> Active participation during conferences with the teacher

Assignment Schedule ENGL 102.419

Monday	Wednesday
Aug 29 Introduction to Course; email 1st assignment by Tues, Aug 30, 9:00 PM	Aug 31 Discuss syllabus Tools of Writing: Observation
Sep 5 Labor Day—*no class* Email 2 Tuesday Sep 6, 9:00PM	Sep 7 Tools of Writing: Purpose + Audience Extra credit—calendar (5 points extra)
Sep 12 Conferences: Action Plan, Writ (3)	Sep 14 Conferences: Action Plan Writ (3)
Sep 19 Tools of Writing: Purpose + Audience **Observation I in class**	Sep 21 Begin preparation Essay I **Action Plan Due**
Sep 26 **Outline, Essay I due**	Sep 28 Introductions and Conclusions
Oct 3 Conferences—bring **Essay I Draft**	Oct 5 Conferences—bring **Essay I Draft**
Oct 10 Begin Research Paper preparation **Essay I Revision Due**	Oct 12 Ishmael Discussion 1, pp. 3-46 **Topic: Research Paper**
Oct 17 Class in Library **JNL I emailed by 9:00 PM**	Oct 19 Ishmael Discussion 2, pp. 49-91 **JNL II emailed Friday, Oct 21, 5:00PM**
Oct 24 Research Paper Preparation **R. P. Outline due**	Oct 26 Ishmael Discussion 3, pp. 95-148
Oct 31 Ishmael Discussion 4, pp. 151-207	Nov 2 Revision and Editing **JNL III emailed by 9:00 PM**
Nov 7 Begin Essay II workshop **Observation II in class**	Nov 9 Essay II workshop
Nov 14 **Essay II Outline due**	Nov 16 Essay II workshop
Nov 21 Conferences bring **Essay II Draft**	Nov 23 Conferences bring **Essay II Draft**
Nov 28 Ishmael Discussion 5	Nov 30 **R.P. Final Copy due**
Dec 5 **Essay II Revision due**	Dec 7 Grammar/Spelling Quiz

Final Examination: Wednesday, December 14, 3:00-5:00

ENGL 102.419
First Assignment

Email to me by August 30 (Tuesday), 9:00 PM, a one-page **essay** (don't just

list answers) covering the following:

4. Personal background:

    Country and First Language
    Major (if not sure, give your best guess)
    Interests/Hobbies
    Live on or off campus
    Any problems with transportation or learning that I
    need to   know about

5. Your attitude toward English:

    Do you like to write? Why?
    Do you dislike writing? Why?
    What do you want to learn/improve this semester? Be
    specific.
    What is your most difficult problem in English? Be
    specific.

6. After reading the syllabus:

    Is there anything that isn't clear?
    Do you have any concerns about the work?
    Do you see any errors?
    Why is it so important to read syllabuses carefully in
    the first few days of the class?

APPENDIX C-Summary of Mentor's Logs

Table 1. Summary of Mentor's Logs

Date	November, 2004
Researcher's Work	The researcher had a meeting with Dr. Ish to identify the instructor's interests and needs. She evaluated technological knowledge and skills. The researcher and the instructor discussed the possible uses of technology.
Instructor's Problems/ Concerns	Dr. Ish did not state any concerns or problems.
Instructor's Positive Comments	Dr. Ish was willing to use Blackboard and other technology in his courses.
Date	December, 2004
Researcher's Work	The researcher started an individual training for Dr. Ish. She introduced Blackboard functions and how to handle digital sounds. She discussed possible use of technology and answered several technical questions by e-mail. Handouts were provided by the researcher in both hard copy and digital formats because he could make his own handouts for the students using the researcher's handouts. The handouts included information on how to access Blackboard, how to enroll in the course site, how to use the basic functions in Blackboard, and how to handle digital sound files.
Instructor's Problems/ Concerns	Dr. Ish was sometimes confused by the idea of technology as a convenience and the effective use of technology for learning. Using technology may not always be convenient and will not always save the instructor time and work.
Instructor's Positive Comments	While going through the Blackboard features, Dr. Ish mentioned many good ideas about using Blackboard features. He was very excited about the possible ways to use them in his courses.

Date	January, 2005
Researcher's Work	The researcher conducted individual trainings to review Blackboard functions and ways to handle digital sounds. The instructor operated the basic functions of Blackboard and digital sound files by using the provided handouts. They discussed the possible use of technology for English 102 and English 107. They also went through language lab functions. The researcher helped prepare the Blackboard site by activating the course site and uploading course materials. The researcher helped Dr. Ish create learning activities for the lab session.
Instructor's Problems/ Concerns	Although Dr. Ish saw many possible ways to use Blackboard, including the use of additional technology, he decided to keep the site fairly limited for this semester due to his concerns about drastically changing his course design.
Instructor's Positive Comments	Dr. Ish was excited about using Track Changes.
Date	February, 2005
Technology Use	Dr. Ish had language lab sessions for ENGL 102 students on February 2, 2005, and 107 students on February 3, 2005. Dr. Ish used the announcement function regularly and uploaded assignments, handouts, and updated information. He started using sound files for English 107. Dr. Ish and his students exchanged recording files. He managed groups, and used the digital drop box and file exchange functions.
Researcher's Work	The researcher reviewed the handout that the instructor made for students and gave suggestions. She also attended the lab sessions to help Dr. Ish and his students. She visited the instructor's office to find why the instructor was not able to listen to the sounds. She found that the earphone was not connected properly.
Instructor's Problems/ Concerns	Dr. Ish was not able to listen to the student recordings in his office. Dr. Ish stated that setting things up takes more time than he imagined.

Instructor's Positive Comments	Dr. Ish liked easy e-mail and announcement functions. Also, he liked the fact that he did not need to carry cassette tapes. Dr. Ish stated that using Blackboard is not as difficult as the instructor imagined.
Date	March, 2005
Technology Use	Dr. Ish continued to use the announcement function regularly and to upload assignments, handouts, and updated information. He also continued using sound files for English 107. He used *Discussion Boards* in the English 102 class. Students came and participated in *Discussion Boards* during class hours.
Researcher's Work	The researcher gave a few suggestions about listening to sound files at home. Dr. Ish was able to listen to the sounds, but it took time to download each sound file due to his network and hardware limitations. The researcher tried to find the software to allow the instructor and students to record their voices at home. The researcher helped the instructor learn how to set up and manage *Discussion Boards*. The researcher was concerned about the way the instructor planned, but since Dr. Ish did not want students participating in *Discussion Boards* at home, the researcher respected his idea.
Instructor's Problems/ Concerns	Dr. Ish wanted to listen to the student recordings at home, but although the researcher gave him possible solutions, it did not work well. The instructor also wanted to record his voice in his office and on his home computer. Although the lab manager gave the software to him, it did not work well. Also, he did not like that students needed to come to the lab to record their voices. He noticed that it was very difficult to control *Discussion Boards*. It was not as productive as he expected. He did not want students to participate in *Discussion Boards* at home. He did not want to change his course design.
Instructor's Positive Comments	Dr. Ish did not state any positive comments.

Date	April, 2005
Technology Use	Dr. Ish continued using the announcement function regularly and uploaded assignments, handouts, and updated information. He also continued using sound files for English 107. He used the Track Changes function in English 102 and provided useful websites to students.
Researcher's Work	The researcher answered questions about technical problems via email.
Instructor's Problems/ Concerns	Dr. Ish wondered whether the technology and all the work involved actually had a pedagogic payoff, or whether or not the students learned more with technology.
Instructor's Positive Comments	Dr. Ish did not state any positive comments.
Date	May, 2005
Technology Use	Dr. Ish continued using the announcement function regularly and uploaded assignments, handouts, and updated information. He also continued using sound files for English 107. He used the Track Changes function in English 102.
Researcher's Work	The researcher answered questions about technical problems via email.
Instructor's Problems/ Concerns	Dr. Ish expressed that he was not sure whether technology was reducing the workload and/or making things any faster.
Instructor's Positive Comments	Dr. Ish used the functions of Track changes. The functions were very helpful both for students and the instructor. Dr. Ish was able to clearly identify the revised sections and words. He was able to easily add comments and point out errors.
Date	End of Spring Semester
Technology Use	Dr. Ish did not use any technology because he did not have a course to teach in the first session of the summer semester.
Researcher's Work	The researcher gave advice and answered questions via email.
Instructor's Problems/ Concerns	Dr. Ish wanted to discuss ways to make the *Discussion Boards* more productive for the fall semester.

Instructor's Positive Comments	The students were able to easily see which parts of their papers they were expected to edit. Blackboard was a helpful tool this semester. Dr. Ish wanted to use Blackboard for the graduate writing course in summer session.

Date	June, 2005
Technology Use	Although Dr. Ish taught a writing course for a graduate student during the third session of the summer semester, he decided not to use Blackboard or other technology.
Researcher's Work	The researcher gave advice about *Discussion Boards*. The advice that the researcher made was as follows: Students have supplementary discussions after face-to-face discussions. They can make up face-to-face discussion points. Students post reading responses and discuss it based on their ideas. Students receive the participation grade for online discussions. Students post the reading questions before class discussions or wrap up questions after face-to-face discussions.
Instructor's Problems/ Concerns	Dr. Ish reflected on the researcher's advice. Students may not try to speak out in class if they can have supplementary, online discussions. Many ESOL students are insecure about posting their writing and this may add pressure. Students may post the same questions to other classmates instead of making their own questions.
Instructor's Positive Comments	Dr. Ish did not state any positive comments.

Date	July, 2005
Technology Use	Dr. Ish did not use Blackboard or other technology for the Graduate English course.
Researcher's Work	Because he did not ask for any help, the researcher did not provide any support. The researcher was out of the country.
Instructor's Problems/ Concerns	Because he did not send any e-mail to the researcher, she did not observe his problems.
Instructor's Positive Comments	Because he did not send any e-mail to the researcher, she did not observe his positive comments.
Date	August, 2005
Technology Use	Dr. Ish started to set up his Blackboard course site for the fall semester.
Researcher's Work	The researcher explained the values of using Blackboard from the following perspectives: information sharing, convenience of collecting homework, and enhancing learning. She made suggestions about the Blackboard course site for the next semester, taught him how to remove previously enrolled students, and showed how to make the course site available.
Instructor's Problems/ Concerns	Dr. Ish stated that adding technological aspects requires a lot of work for the students and might be an overload. Using technology requires a lot of time on behalf of the instructor, but the effectiveness is not clear. Using e-mails was easier, simpler, and quicker than using Blackboard functions. The value of using Blackboard was not clear and his teaching style might not be appropriate for using technology. Also, the University would not account for the faculty's' efforts in using technology. Dr. Ish did not want to use class time to explain Blackboard, although he was able to manage the explanation well last semester.
Instructor's Positive Comments	Dr. Ish did not state any positive comments.

Date	September 1, 2005 (Interview 1)
Technology Use	Dr. Ish set up Blackboard for English 102 and uploaded course materials. He used the announcement and email functions in Blackboard regularly.
Researcher's Work	The researcher did not give any direct advice, but she offered support whenever he needed help.
Instructor's Problems/ Concerns	Dr. Ish was afraid that he would have to spend a lot of time using technology. He was less confident about using each function he used in the previous semester. He was skeptical about whether or not technology would work as he had planned. He had not decided whether he would use *Discussion Boards*.
Instructor's Positive Comments	Dr. Ish was a little bit more comfortable using the Blackboard and Track Change functions than the first semester. He had positive feelings about the Track Changes function. Although it may have been slightly problematic, he was willing to use it. He was sure that it would pay-off in student writing.
Date	September, 8, 2005 (Interview 2)
Technology Use	Dr. Ish continued using the announcement and email functions in Blackboard regularly. He uploaded course materials and set up group pages between the instructor and each student in order to have all homework in one group folder.
Researcher's Work	The researcher advised him to contact the technology center to fix his e-mail account. The researcher checked the assignment section and told Dr. Ish to check the one setting to make the material available. It solved the problem.
Instructor's Problems/ Concerns	Dr. Ish uploaded information about one of the assignments into Blackboard, but was not able to see it. The instructor's e-mail account had a problem. He did not receive many of his e-mails. He started thinking that technology might not be worth using in his course, but he thought that every tool could have problems, and technology would not be going away. He questioned receiving papers in digital format. He thought that it was a lot easier to pick up the papers in class.

Instructor's Positive Comments	Dr. Ish liked Blackboard as a simple communication tool to make announcements and send e-mails.
Date	September 15, 2005 (Interview 3)
Technology Use	Dr. Ish continued regularly using the announcement and email functions in Blackboard and uploading course materials.
Researcher's Work	The researcher advised him that he could choose either e-mail or Blackboard functions. The researcher told him that it would be the instructor's preference. E-mail might be easy to access, but might not have enough capacity to save all student papers. Blackboard might require several steps to download and upload files, but both the instructor and student could see what paper was submitted into the folder.
Instructor's Problems/ Concerns	Dr. Ish's university email still did not work properly. The support center examined the problem. The instructor heard the rumor that Blackboard would not be used next semester. Dr. Ish stated that since technology could not be reliable, professors should have a back-up plan. He was not sure whether he should collect assignments via e-mail, digital drop box, or by setting up individual groups using the file exchange function. He thought that using e-mail would be easier because it could involve less clicking to download and upload files. He was not sure how he could measure the effectiveness of *Discussion Boards*. He also stated that a computer cannot make eye contact; therefore, the instructor cannot tell whether students are paying attention to the discussion. They might be watching TV and posting their comments.
Instructor's Positive Comments	Dr. Ish did not state any positive comments.

Date	September 22, 2005 (Interview 4)
Technology Use	Dr. Ish continued regularly using the announcement and email functions on Blackboard and uploaded course materials. He also created one Discussion forum. The format was that students could ask questions about the assignment if they did not know what to do.
Researcher's Work	The researcher observed Discussion forums.
Instructor's Problems/ Concerns	Dr. Ish stated that if technology is used, one could face problems. The rumor that Blackboard might not be available next semester affected his motivation. He wondered whether he should invest all this time and effort.
Instructor's Positive Comments	Dr. Ish liked an easy e-mail function because he did not need to make the distribution list. He stated that because the technology would stay, he might be missing helpful tools if he didn't use it. He was not getting upset as easily as he used to, even though technology did not work. He accepted that it would be the nature of technology.
Date	September 29, 2005 (Interview 5)
Technology Use	Dr. Ish continued regularly using the announcement and email functions in Blackboard and uploading course materials. He also used DVD.
Researcher's Work	
Instructor's Problems/ Concerns	Dr. Ish asked for a DVD-player to be brought to the classroom at 5:45, but the DVD-player was delivered 5 minutes after 6. The DVD was taken away with the DVD-player. *Discussion Boards* required the instructor to check the forum regularly because he did not know when students were going to ask a question.
Instructor's Positive Comments	Dr. Ish did not state any positive comments.

Date	October, 13 2005 (Interview 6)
Technology Use	Dr. Ish continued regularly using the announcement and email functions in Blackboard. He uploaded course materials and started collecting papers via Blackboard. He also created a *Discussion Board* forum about reading one. He informed students that they could improve their first discussion grade if they participated in the online discussion forum, but only one student posted a comment and did so anonymously.
Researcher's Work	The researcher gave advice about online discussions, taking into consideration Dr. Ish's concerns. The advice was that class discussions could be facilitated based on the questions posted by students. The instructor might not need to respond to all of them.
Instructor's Problems/ Concerns	Dr. Ish faced a dilemma about how to collect journals by e-mail or via Blackboard. Dr. Ish stated that students would not prepare for some classes. Even though online discussions were created, students might not participate in those because of other exams. The instructor was concerned that he might give students too much work. Also, he was concerned that he should read all threads and spend time responding to and grading online discussions.
Instructor's Positive Comments	Dr. Ish stated that if you focus on the negative side of technology, you miss the absolute positives of technology.

Date	October 20, 2005 (Interview 7)
Technology Use	Dr. Ish attended a workshop about Microsoft Outlook on the previous day, and was going to attend another workshop about Outlook the next day. He continued regularly using the announcement and email functions in Blackboard and uploading course materials.
Researcher's Work	The researcher just observed what the instructor was doing, and waited for him to seek advice on *Discussion Boards.*
Instructor's Problems/ Concerns	Dr. Ish did not state any problems or concerns about using technology.
Instructor's Positive Comments	Dr. Ish started to think that he must continue to learn how to use the programs. He also stated that if you do not know how to use your tools skillfully, then you will do a lot of extra work. He was impressed with students' questions and responses. He started thinking that *Discussion Boards* may be a beneficial tool. Students' comments were interesting to read for the instructor.
Date	October 27, 2005 (Interview 8)
Technology Use	Dr. Ish continued regularly using the announcement and email functions in Blackboard and uploading course materials. He also created the second discussion forum. Students earned four points for class face-to-face discussions and two points for online discussions. He also used the announcement and email functions in Blackboard regularly.
Researcher's Work	The researcher observed how the instructor facilitates *Discussion Boards*.
Instructor's Problems/ Concerns	Dr. Ish had a problem with his e-mail.
Instructor's Positive Comments	Dr. Ish was impressed with students' questions and responses. He started thinking that *Discussion Boards* might be a beneficial tool. Students' comments were interesting to read for the instructor.

Date	November 3, 2005 (Interview 9)
Technology Use	Dr. Ish continued regularly using the announcement and email functions in Blackboard and uploading course materials. He also created the third discussion forum and responded to a couple of comments.
Researcher's Work	The researcher helped him find the missing folder.
Instructor's Problems/ Concerns	The instructor had a problem with his e-mail folders. One folder disappeared.
Instructor's Positive Comments	When Dr. Ish faced the problem, he was not upset about it. He tried to fix the problem. He had been having a hard time connecting with students, but after using *Discussion Boards,* he felt better working with them. He discovered that students' questions and ideas were all sophisticated and well thought-out. The threads, including students' insightful ideas and opinions, reduced his feelings of obligation to read them. He read them because he wanted to; he read them because they were interesting.

Date	November 10, 2005 (Interview 10)
Technology Use	Dr. Ish continued regularly using the announcement and email functions in Blackboard and uploading course materials, He graded student participation in *Discussion Boards* using the sorting function. He used the Track Changes function with a Microsoft Word file.
Researcher's Work	The researcher did not provide any specific support.
Instructor's Problems/ Concerns	Dr. Ish did not state any problems.
Instructor's Positive Comments	Dr. Ish stated that online discussion made face-to-face discussion sharper. He had a feeling that the *Discussion Boards* enabled students to assert themselves and to see that they had something to say. He also noticed that students seemed to be comfortable and confident expressing their ideas. He identified that grading *Discussion Boards* was not as hard as he expected, the Track Changes function worked well, students made efforts to revise their draft using Track Changes, and the instructor easily recognized how many revisions they made.
Date	November 17, 2005 (Interview 11)
Technology Use	Dr. Ish continued regularly using the announcement and email functions in Blackboard and uploading course materials. He used Track Changes with a Microsoft Word file.
Researcher's Work	The researcher did not provide any support.
Instructor's Problems/ Concerns	Dr. Ish did not state any problems.
Instructor's Positive Comments	Dr. Ish started to feel that using technology would take less effort for the instructor. It became more natural for him to use it. He became more comfortable finding ways to use it or having to try something.

Date	December 2, 2005 (Interview 12)
Technology Use	Dr. Ish continued uploading course materials and used Track Changes with Microsoft Word files.
Researcher's Work	The researcher did not provide any specific support.
Instructor's Problems/ Concerns	Dr. Ish decided not to use the *Discussion Boards* before the last reading discussion because students might be very busy for the final exams coming soon.
Instructor's Positive Comments	Dr. Ish said that he was more actively seeking ways to use technology than before and more-open minded about using technology.
Date	December 8, 2005 (Interview 13)
Technology Use	Dr. Ish continued regularly using the announcement and email functions in Blackboard.
Researcher's Work	The researcher did not provide any specific support.
Instructor's Problems/ Concerns	Dr. Ish stated that workload was still an issue for both the instructor and students. Pedagogical pay-off would be important.
Instructor's Positive Comments	Dr. Ish wanted to use more *Discussion Boards* and add more points to the online discussions next semester. He felt a lot more comfortable trying things. He was still cautious, but he did not have as much resistance compared with before. He noticed that Track Changes worked very well and the function motivated students to revise their draft. The instructor was able to easily see what the students had done. The instructor finally found ways of using *Discussion Boards*. They were what he was looking for.

APPENDIX D-Summary of Each Stage in LoU chart

Table 2. Summary of Each Stage in LoU chart

Level 0 *Non use*	The user has little to no knowledge about innovation.
Level I *Orientation*	The user has lately acquired or is acquiring information about the innovation.
Level II *Preparati*on	The user is preparing for using the innovation for the first time.
Level III *Mechanical use*	The user focuses on short-term use of innovation. The user looks at the user's need more than the client's need.
Level IV-A *Routine*	The user begins to use innovation in a routinely manner.
Level IV-B *Refinement*	The user focuses on more short-term and long-term impacts on clients.
Level V *Integration*	The user tries to incorporate colleagues' activities to make collective impacts. The user tries to integrate the innovation and client's needs.
Level VI *Renewal*	The user seeks the modifications of the use of innovation to increase impact on clients.

Seven Categories within each stage….

- *Knowledge*: Cognitive knowledge (not attitudes) about the innovation, such as how to use it and what is the consequence of the innovation.
- *Acquiring information*: Inquiring about the innovation.
- *Sharing*: Discussion of the innovation with others including talking about opinions, plans, resources, and problems.
- *Assessing:* Examination of the potential merits of the innovation. This can be a mental assessment or it can involve actual data collection.
- *Planning:* Development of short -and long term plans for adoption of the innovation.
- *Status reporting:* Expression of current personal position about the use of innovation.
- *Performing:* Carries out the operation of the innovation.

(Hall et al., 1975)

APPENDIX E- Sample of Students Online Contributions in the 2005 Fall Semester

Forum: Ishmael Discussion 2 pp. 49-91

Date: 10-25-2005 19:42

Author: Denise

Subject Re: Discussion 3 pp95-148

My answer is "Yes".

In the world, no, from the begining of the world, everything has had two side. There were night and day, adam and eve, femail and mail(animal), truth and lie, good and bad. If there are takers, there should be leavers. In this book they called all civilized one takers, however, we can also divide any group into takers and leavers. For example, students who get grade B and more in the class could be takers, because they might be educated more than others.

If we denote things with certain rules and standard, there is no reason to argue with that. Ishmael and narrator indicated to call the civilized one takers, then do we have to disagree with that?

I I

Forum: Ishmael Discussion 2 pp. 49-91

Date: 10-25-2005 20:58

Author: Elise

Subject Re: Discussion 3 pp95-148

I liked the approach from Denise, that everything has two sides. It sounds like a Buddhist approach to me, which religion I would categorize into the leavers rather than Christendom. Maybe I am wrong about that, but those monks live a lot more like leavers than any priest of the western world.

In reply to one classmate John Doe: takers and leavers *are* coexisting in our world. We talked about the population from Papua New Guinea, they are still leavers. Moreover, as mentioned before, there are monks and so on who are able to live as leavers. Anyway, I agree with you in the point that the takers are about to exterminate the leavers. If it was not the case, Quinn would not have had any reason to write this book. On the other hand, as Denise said before, everything has two sides and i wonder what would happen if the leavers would be gone. With leavers gone, is there a chance for takers? Think about it.

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Publications, Inc.

CURRICULUM VITA
Junko Handa

8015 York Road Apt B-5 Towson, MD 21204 USA

jhanda@towson.edu or junko_h3@mbr.nifty.com

EDUCATION

December 2006   **Doctorate of Education, Towson University, Towson, MD, USA**
Major: Instructional Technology

May 2001   **Master of Arts, Towson University, Towson, MD, USA**
Major: Liberal & Professional Studies

March 1996   **Bachelor of Arts, Tamagawa University, Tokyo, Japan**
Major: Liberal Arts, Foreign Language

PROFESSIONAL EXPERIENCE

1999- 2006   **College Instructor—Dept. of Foreign Languages**
Towson University, **Towson, MD, USA**

Courses Taught   Japanese Introductory I, Introductory II, Intermediate I, Intermediate II

AWARDS

- Graduate Student Association Award. Towson University. October, 2006.
- Graduate Student Association Award. Towson University. March, 2006.
- Graduate Student Association Award. Towson University. November, 2005.
- Ursula Williams Graduate Student Conference Grant The International Association for Language Learning Technology. August, 2005.
- Honorable Mention for "What is the impact of online communication in Japanese language learners?" Towson Chapter 0202, Phi Delta Kappa International Education Honor Society. May, 2005.
- Nicholas Graduate Scholarship Award Kappa Delta Pi, International Education Honor Society. May, 2005

PROFESSIONAL PRESENTATIONS

Handa, J.(April, 2006). *A Case Study: A Veteran English Instructor Resists and then Integrates Technology for Second Language Learners.* Seventh Annual Student Research and Scholarship Expo Towson University, Towson, MD.

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