

A CROSS CASE ANALYSIS OF COMPUTER USE AMONG
ELL UNIVERSITY INSTRUCTORS IN TAIWAN

By

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ABSTRACT

This study explored the use of computers by Taiwanese English language learning (ELL) teachers at Colleges of Technology in Taiwan. A cross case analysis of four teachers was undertaken to examine these teachers' actions, beliefs, and the contexts they teach in so as to illuminate issues related to the implementation of computers for instructional purposes. Methods from the grounded theory research tradition were employed in the analysis of qualitative data.

In terms of beliefs, results indicate that teachers consider technology to have a dehumanizing impact on ELL teaching and learning. They also consider that technology is useful for efficient classroom management. Further, while teachers believe that technology motivates students, it can also be distracting to students and encourage off-task behavior. They also believe that technology implementation requires more time than it is worth.

In terms of actions, results indicate that teachers resist a sense of disempowerment that results from top down punitive evaluations through passive aggressive actions such as cutting corners and cosmetic compliance. However, they also ask for more technology training to ameliorate their technophobia.

In terms of context, this study revealed that when technology is used, teacher centeredness and control remains. Technology does not essentially change instructional style or classroom culture. Also, the top down Ministry of Education evaluation punishes schools that fail to meet evaluative standards by furnishing them fewer resources. This results in the schools' increased vulnerability. Teachers perceive this misaligned evaluative measure as punishing them and their schools unfairly thus having a damaging impact on morale and appropriate technology implementation.

CHAPTER 1: INTRODUCTION TO THE PROBLEM

Introduction

Technology implementation for instructional purpose has always been of interest among policy makers and administrators. However, in the top-down decision making process, teachers' opinions are seldom consulted. Even though researches have suggested potential advantages of incorporating computer technology for language learning and administrators highly encourage teachers to adopt computer technology for instruction, the actual use of technology by teachers is still disappointing to policymakers and administrators. Just as Cuban (2001) claimed, more than ten percent of teachers are infrequent users of computers in school. Cuban (2004) also asserted that without involving teachers in the decision-making process, the policies will become just compliance and may not be fully adopted by the practice community. In addition, the lack of mutual communication between political officials and educators will result in a failure in education reform because their different ideologies cannot be reconciled with each other. Therefore, the disregard of teachers' perspectives of technology implementation and the overlook of teachers' real needs and concerns in teaching are apparently the reasons that cause the gap between policymakers' expectations and teachers' actual use of technology for instructional purposes in school contexts. Therefore, in order to bridge the gap, it is necessary to investigate teachers' central concerns as well as the actions they take in response to top-down decisions with respect to technology implementation.

Background

Learning English as a foreign language has always been a hot issue in Taiwan. Recently, the government even declared that they aim at promoting English as the second official language in the near future in Taiwan. English has been a required subject to be learned in junior high

school, senior high school, and the first two years in college. Students' English proficiency is also tested in the senior high school entrance exam and college entrance exam. Starting from 2001, English has also become a required course to be taken in elementary school. In Taiwan, many job positions also require applicants to prove their English proficiency by providing the Test of English as a Foreign Language (TOEFL) score or the General English Proficiency Test (GEPT) score. The TOEFL exam is a widely used test usually used for college and university admission purposes developed in the United States. The GEPT is a standardized English proficiency test developed by the Language Training and Testing Center in Taiwan (LTTC) in 2000. Because of the impact of globalization, the Taiwanese believe that English proficiency and computer skills are the two major qualifications one needs in order to be more competitive in the current job market. Therefore, in Taiwan, a tremendous number of language institutes/cram schools providing English proficiency training have appeared in recent years. Their target customers range from young kids to adult learners. Many of the language institutes' chief goal is to level up learners' English proficiency within the shortest amount of time so that learners can get a satisfying TOEFL score or GEPT score for a better job position. In addition to the purpose of job application, many Taiwanese students learn English in order to receive further educational training in English speaking countries such as the United States and the United Kingdom. In short, English proficiency has become a required qualification Taiwanese people need regardless of the percentage of actual usage in their daily life in the local context. Learning English is an unquestionable trend that most Taiwanese people are affected by.

Historically, Taiwan has a close connection with the United States politically and economically. Because of this connection, it is not hard to understand that the ideology of school reform and educational philosophy in the United States have had a great impact on the education

system and policies in Taiwan. Recently in the United States, with sufficient evidence of the benefits of technology implementation supported by researchers, administrators started to invest a huge amount of money in purchasing hardware and software in order to facilitate teaching and learning. Partly because of the impact of globalization (that English and technology are important) and partly because of the inspiration gained from school reform trends in the United States, the idea of technology implementation in education has attracted the attention of many Taiwanese policymakers. Therefore, in Taiwan, the use of computer technology for instruction is just beginning to proliferate by some educational computing enthusiasts, administrators, and policymakers because they have a positive attitude toward the potential benefits that computers offer in language teaching and learning. They believe that with the aid of computer technology and by providing students with training on computer literacy, schools can well-prepare students to compete in the future job market. Therefore, having computer labs with response systems; equipping classrooms with TV sets, computer projectors and Internet connection and developing online interactive learning materials and sources to enhance foreign language acquisition are the common trends followed by many colleges in Taiwan. This is because administrators believe that they can successfully recruit more students by providing a technology-rich learning environment.

Unfortunately, this trend is criticized by many educators in Taiwan because many of the policies regarding the implementation of technology in schools were directly adopted from the United States without being carefully evaluating its compatibility with the local context and the local culture. Learning English through technology is one example of this problem because the organizational structure and the power relationship between teachers and students in Taiwan are different from the situation in the United States. In Taiwan, class size is relatively large with approximately fifty to seventy students in each class. Most classes are teacher-centered and

knowledge is transmitted through lectures. In other words, memorizing and recitation are encouraged in many classes and learning is neither dynamic nor interactive. Therefore, if teachers hold the belief that their role is to deliver knowledge and that students are passive learners, it makes it even harder to promote technology implementation in education because teaching and learning with the aid of technology is often promoted using a student-centered approach. The idea of technology implementation conflicts with teachers' beliefs and their teaching strategies they are accustomed to. In addition, in some schools, teachers have the authority to determine the teaching materials and their teaching strategies. However, in other schools, teachers in the same department have to reach an agreement regarding textbook selection and the sections to be covered. In this case, teachers usually have time pressure to reach the fixed curricular schedule and therefore, they might abandon a more time-consuming but more interactive teaching strategy. In other words, the reality of daily practice might inhibit teachers from implementing technology in their instruction regardless of the benefits technology might bring to teachers and students. Therefore, before promoting technology implementation, it is essential to know teachers' central concerns and their needs in dealing with the problems in their daily teaching practice.

Statement of the Problem

In Taiwan, technology implementation has been promoted by policymakers and administrators. Hardware and software are purchased and professional training and technical support are provided. Teachers are also aware of the potential of technology implementation. However, research shows that the actual use of technology for instructional purposes among Taiwanese college English Language Learning (ELL)¹ instructors is still disappointing (Chen,

¹ In the literature, the term ESL is used to mean English as a Second Language. This refers to English language learners who are learning the language in the context of an English speaking environment. The term EFL is used to

2006; Pai, 2005). In order to bridge the gap between policymakers' high expectation of technology implementation and the infrequent use of technology among the practice community, it is essential to further investigate Taiwanese college ELL instructors' central concerns in depth and the actions they take in response to top-down decision regarding technology implementation.

Significance of the Study

Much of the research on technology implementation focuses on its potential for enhancing students' learning achievement (Belmonte & Verdugo, 2007; Biesenbach-Lucas, Meloni, & Weasenforth, 2002; Greenfield, 2003; Stepp-Greany, 2002) as well as the strategies of implementation technology in a particular subject area (Chiau, 2000; Liou, 2000a, 2000b, 2000c; Pan, 2000; Teng, 2000; Wu, 2000; Yang, 2000). Other research focuses on investigating teachers' central concerns through quantitative study (Becker, 2001; Egbert, Nakamichi, & Paulus, 2002; Jones, 2001; Pai, 2005; Pilus, 1995). However, a limited body of literature focuses specifically on the teachers' perspective with respect to technology implementation by deeply looking at the context in which the teachers are situated. There is also a limited body of literature investigating the actions teachers take in response to top-down decisions and how they overcome the dilemma of dealing with the reality of daily practice or obeying policies. Therefore, in order to bridge the gap between policymakers' high expectations regarding technology implementation and teachers' infrequent use of technology for instructional purposes, it is essential to investigate teachers' central concerns and beliefs, the actions they take in response to top-down decisions, and the context in which they are situated. These three constructs (teachers' beliefs, teachers' actions, and the context) cannot be separated from one another and the interplay of these three

mean English as a Foreign Language. This refers to English language learners who are learning the language in the context of a non-English speaking environment. At times the terms are used interchangeably in the literature. In this research, the more up-to-date term ELL will be used to mean English Language Learner/Learning. The term ELL is thought by some to avoid privileging one context or another.

constructs should be further investigated in order to bridge this gap.

CHAPTER 2: LITERATURE REVIEW

Introduction

In this chapter, the existing literature regarding technology implementation will be presented. First of all, the use of technology in education will be introduced. This section will address reasons for teachers' infrequent use of computer technology for instructional purposes. Secondly, the research that focuses on the potential of computer technology for ELL teaching and learning will be laid out. Thirdly, the most prevalent topics in terms of technology integration investigated in the field of ELL will be discussed. This section highlights Computer-Assisted Language Learning (CALL) and includes a historical review of its development, its potential and limitations, and teachers' attitudes toward CALL. Finally, current research with respect to technology use in the ELL context in Taiwan will be outlined. This section pays particular attention to addressing the potential for and limitations of particular instructional systems such as distance education, synchronous computer-mediated communication systems, asynchronous computer-mediated communication systems, interactive web-based learning platforms, and so on.

The Use of Technology in Education

In the contemporary period, people who do not demonstrate a facility with computer use would likely be considered as "illiterate" since we have witnessed unprecedented growth in our reliance on computers for work, for education, for personal communication and for entertainment. For children growing up in the Information Age, it is hard to imagine a world without computers and the Internet. In the past, teachers and school libraries were the major sources of information for students. Nowadays, the teacher is just one of the numerous information sources available to students. Even though technology cannot fundamentally change our education system, its

development, indeed, challenges and reshapes our conceptions of teaching, learning, and schooling. However, research has shown that educators respond to this change haltingly, with trepidation and electronically assisted modes of learning have been resisted in formal education contexts (Cuban, 1986, 2001; Squire, 2006).

Teachers' Infrequent Use of Computer Technology for Instructional Purposes

Research has indicated that computer technology for instructional purposes is underused by teachers (Cuban, 1986). A significant body of research in terms of technology implementation addresses the reasons that cause teachers' infrequent use of computer technology. According to Anthony, Hilliker-Vanstrander, Meskill, Tseng, and You (2006), time and resources are two major factors that impede teachers from integrating computer technology for instructional purposes. Other reasons include inaccessible hardware, inappropriate software, inadequate training and technical support, organizational constraints and the incompatibility between technology and the existing curriculum (Cuban, 1986). Lam (2000) noted that once a technical problem has occurred during a class period, it takes too much class time to repair the machine and eventually this prevents teachers from meeting the class schedule as well as drives students' attention away from the focus of the subject. Consequently, some teachers might not consider technology as a reliable device for facilitating teaching.

In addition, teachers might fail to perceive the relative advantages of technology so that they only use it for limited purposes. Russell, Bebell, O'Dwyer, and O'Connor (2003) provided evidence that suggests that "teachers generally use technology more for preparation and communication than for delivering instruction or assigning learning activities that require the use of technology" (p. 297). Therefore, even though some teachers perceive technology as an empowering tool, they might simply use it to prepare lessons instead of using it as a tool to

facilitate teaching and promote interactive learning. McGrail (2007) also pointed out that language teachers tend to have a narrow conception of technology; therefore, it is often considered as “a device for drill practice on basic skills or merely as a means for word processing, rather than as a literacy of its own” (p. 60).

Other researchers claimed that technology implementation or hardware/software purchasing is a top-down decision-making process in which teachers’ needs, concerns and the challenges they encounter are disregarded (Cuban, 1986; Lam, 2000; Lankshear & Knobel, 2003). Besides, Russell and his colleagues (2003) noted that a vast majority of administrators fail to recognize how teachers use technology and how to evaluate teachers’ use of technology. Accordingly, before purchasing hardware and software, they have high expectations of technology implementation but they are eventually disappointed at teachers’ actual use.

Furthermore, policymakers and administrators fail to recognize the importance of developing a pedagogical framework to guide teachers in finding appropriate methods to integrate technology into current teaching and learning contexts. This can result in teachers’ reluctance to employ technology or in teachers simply exposing students to the available software without providing adequate guidance or appropriate curricular connection (Lam, 2000; Young & Bush, 2004). Thus, Young and Bush (2004) argued that technology should not stand alone or become the major focus. Instead, they urge educators and researchers to develop pedagogical frameworks stating that, “pedagogical goals take precedence; the technologies are thought of as another means of reaching those goals” (p. 8). Otherwise, regardless of its potential, technology could just become a burden to educators.

Finally, other researchers pay particular attention to teachers’ beliefs regarding their use of technology for instruction. For instance, McGrail (2007) mentioned that if teachers’

pedagogical beliefs are apt to be teacher-centered, they tend to fail to see technology as medium for communication and interaction. They simply perceive technology as a tool for online research, word processing, note taking and presentation applications. Moreover, Becker (2001) asserted that teachers' use or nonuse of technology and their objectives reflect their beliefs about teaching and learning. For instance, Becker found that if teachers have time pressure to finish the required lessons, they tend not to use technology for instruction. On the contrary, if the objective of the class is to cover a small number of topics in great depth, it is more likely for teachers to employ technology. Becker further claims that when working with students who are less successful in academic performance or who are from a lower-socioeconomic background, many teachers tend to utilize technology "as a means of practicing lower-level skills and as a means of social control" (p. 5). This is because teachers hold the belief that these students are not capable of handling challenging tasks.

The Potential of Computer Technology for ELL Teaching and Learning

The pedagogy of ELL learning has shifted its focus from instruction (teacher-centered) to learning (student-centered); therefore, language teachers have a deep-rooted belief that engaging students in an authentic, interactive and collaborative learning environment is the key to successful language learning. Impacted by the ELL community's teaching philosophy, there is a significant body of existing literature addressing the potential of computer technology for ELL teaching and learning.

For instance, Bransford, Brown and Cocking (2000) identified three major attributes of technology that make it possible to create a desirable learning environment for learners. First of all, many technologies offer learners an interactive environment where learning can occur through exploration and experience. Further, students' understandings can be refined according

to immediate feedback which is possible in a technology-rich learning environment. Eventually, new knowledge can then be generated through continued reflection and revision. Second, many technologies can help learners to visualize abstract concepts. Through visualization and simulation, it is easier for learners to conceptualize hard-to-understand ideas and transfer the knowledge acquired in school settings to their real-life experiences. Third, technologies provide access to various sources of information to both educators and learners so that it bridges the connections between school and communities (Bransford, Brown, & Cocking, 2000).

In addition, in order to urge the utilization of technology in educational settings, many researchers make efforts in probing the potential benefit of educational technology. For instance, studies of technology implementation in classrooms have indicated that the use of computers for pedagogical purposes can enhance students' motivation for learning (Biesenbach-Lucas, Meloni, & Weasenforth, 2002; Greenfield, 2003), can create student-centered learning environments (Salaberry, 1996; Sandholtz, Ringstaff, & Dwyer, 1997; Warschauer, 1997), can improve learning outcomes (Belmonte & Verdugo, 2007; Stepp-Greany, 2002), and can advance the quality of classroom instruction (Chapelle, 2001).

Besides, Wood (2001) suggested that the visual images and auditory information embedded in the gaming formats of educational software can reinforce language learners' retention. Furthermore, in terms of language acquisition, multimedia can provide several specific benefits to language learners. For instance, multimedia technology with audio and video functions can enhance language learners' listening comprehension (Brett, 1997; Jakobidottir & Hooper, 1995; Merler, 2000). Moreover, with visual referents, multimedia can effectively present new lexical items and enable language learners to acquire new vocabulary more easily (Jones & Plass, 2002; Nikolova, 2002). Finally, Stenson, Downing, Smith, and Smith (1992)

suggest that the unique feature of multimedia of being able to present sound and images at the same time allows language learners to compare aural output with visual displays of native speakers' speech and therefore can help language learners to improve their pronunciation.

Since research has provided convincing evidence to show that technology can help educators and learners to create an ideal learning environment and to achieve desired outcomes, the next step is for researchers and educators is to investigate how to incorporate technology into existing curricula. As Moeller (1997) argued, "...technology alone is not what makes a difference in acquiring a foreign language. The use of the technology coupled with sound pedagogical principles is necessary" (p. 12).

ELL Teachers' Use of Technology: CALL

In terms of technology use for pedagogical purposes, Computer-Assisted Language Learning (CALL) has been one of the most prevalent topics investigated by researchers in the field of ELL. Existing literature regarding ELL teachers' use of CALL software pays particular attention to three aspects: a) it highlights the approach of developing a CALL program based on certain teaching or learning theory (Chen, 2005; Chen, 2000; Jo & Perez, 2000; Young, 1988); b) it emphasizes the evaluation of a certain type of CALL program regarding its potentials and limitations for language teaching and learning (Blin, 1999; Bloom, 1984; Egbert, Nakamichi, & Paulus, 2002; Gips, DiMattia, & Gips, 2004; Gonzalez-Bueno, 1998, 2000; Gonzalez-Bueno, 2000; Greenfield, 2003; Honeycutt, 2001; Jones, 2001; Lawrence, 2002; Lee, 2000; Levy, 1997; Moeller, 1997; Robertson, Ladewig, Strickland, & Boschung, 1987; Warshauer, 1997; Warshauer & Healey, 1998); or c) it pays particular attention to teachers' attitudes toward the use of CALL for instructional purposes (Egbert, Paulus, & Nakamichi, 2002; Evans, 1998; Jones, 2001; Lam, 2000; Pilus, 1995).

In the following section, I will first present a historical review of the use of technology in language learning generally and ELL in particular. Second, I will adopt Lave's treatment of CALL to further discuss its emergence in this history, its use among ELL teachers for instruction and its impact on ELL pedagogy. Third, I will lay out the existing research addressing recent developments in CALL. This section introduces the underlying theoretical foundations that support the current CALL approach as well as its potential impact on ELL teaching and learning. Fourth, I will discuss the potentials and limitations of CALL employed in the ELL context. Finally, I will introduce the research findings regarding ELL teachers' attitudes toward CALL.

A Historical Review

As Salaberry's (2001) review of the use of technology for second language learning and teaching indicates, before the introduction of computer technology into education, teachers mostly used audiovisual media (such as radio broadcasts, television, films and video) and other teaching devices (such as overhead projectors, audio-active voice reflectors, spectrographs, the dormiphonics technique and the language learning laboratory) to facilitate their teaching. When computer technology was first introduced to the field of second/foreign language teaching and learning, it appeared in the form of drill for skill. This type of computer-based instruction was called Computer-Assisted Instruction (CAI). CAI was also derisively referred to as "drill to kill," by some because many considered the incessant drill and practice approach to be terribly boring. CAI programs basically provide learners with questions and following students' responses, computers will provide feedback to guide students to the correct answer. Therefore, educators criticized the question-answer-feedback sequence as lacking in challenge and engagement and failed to motivate students to learn. In order to overcome the limitations of CAI, another type of pedagogical application of computer technology was developed and called Intelligent Computer-

Assisted Language Learning (ICALL). Intelligent CALL attempts to mimic human tutors in identifying problematic areas of learners' responses and providing feedback to the responses. Later on, with the advent of the Internet, Computer-Mediated Communication (CMC) was developed as a way to provide second/foreign language learners an environment for face-to-face communication (Salaberry, 2001).

Levy (1997) defined Computer Assisted Language Learning (CALL) as “the search for and study of applications of the computer in language teaching and learning” (p. 1). CALL leverages the most up-to-date applications of computer technology for this purpose. Levy further distinguished the development of CALL into three time periods: the 1960s and 1970s, the 1980s, and the 1990s. In the 1960s and 1970s, the most representative CALL software packages were two CAI projects: PLATO and TICCIT. The underlying principles of these two CAI projects were derived from the audiolingual approach. Levy further pointed out that the audiolingual approach is influenced by Skinner's behaviorism and it emphasizes teachers' use of the target language to present “new vocabulary and structures through dialogues which students learned through imitation and repetition” (p. 14). In the 1980s, microcomputers were cheap and widespread. In this period, the development of CALL software was influenced by the approach of “Communicative Language Teaching” which focuses on the needs of individual learners and emphasizes that language must be learned in realistic contexts in which the language is used for real communication (e.g. Krashen, 1988). Teachers were also involved in creating CALL software. Consequently, the success of a given CALL program was determined by teachers' skills in implementing it into lessons. In the period of 1990s, with the advent of the Internet and with its capacity to handle more digital information, many CALL programs were developed with multimedia materials. In addition, CALL programs during this period aimed at providing

learners an interactive environment rather than developing teaching resources. Therefore, students' autonomy was highlighted (Levy, 1997).

Developing CALL Programs Based on Theories

Levy (1997) argued that there is an absence of theoretical underpinnings for the development of CALL materials that could guide educators in teaching and learning with technology. In response to this need, many researchers in the field of language learning have sought to design CALL programs based on certain theoretical foundations in order to maximize its effectiveness for language teaching and learning. In this respect, Egbert, Chao, and Hanson-Smith (1999) addressed the importance of incorporating a theory-based approach to develop computer-based instruction and suggest that “a theory of CALL is a theory of language acquisition; the fact that technology changes does not mean that the principles of language development do” (pp. 1-2). In other words, to guarantee a successful application of CALL to the existing ELL curriculum, it is necessary to incorporate the pedagogical principles of language teaching and learning in the design process.

Efforts that have focused on CALL research and development have generally borrowed ideas from the fields of Second Language Acquisition (SLA), Teaching English to Speakers of Other Languages (TESOL), Cognitive Science, or Social Constructivism. These fields have been influenced recently by the notion that knowledge is socially constructed and that second/foreign language learners can best acquire the target language through interaction with others in an authentic, interactive and natural learning context. Consequently, a lot of CALL software mostly provides an interactive and collaborative learning environment with authentic materials or attempts to create a learner-centered environment to promote learning motivation.

For instance, Young (1988) conducted an empirical study and asserted that if CALL

software allowed learning outcomes to be negotiated instead of predetermined, successful language learning would most likely be achieved. With this conception in mind, Young proposed a model for the development of CALL software based on the “interactionist theories” of SLA (Second Language Acquisition). Young further concluded that the negotiable-outcome type of CALL software can create a natural learning environment that allows language learners to engage in conversations and interactions that would be beneficial.

Furthermore, Jo and Perez (2000) proposed developing an online learning environment that would emphasize the creation of a learner-centered and flexible learning environment. The underlying principles of the design of this online learning environment were derived from the theory of constructivism that highlights collaborative learning, learners’ autonomy and context-based learning (Duffy & Cunningham, 1996). In other words, the online learning environment Jo and Perez proposed would enable language learners to construct and reconstruct their knowledge through interaction and collaboration with other peers and concurrently this allows learners to set their pace in learning in order to fit individuals’ different learning styles.

Moreover, Chen (2000) developed a web-based language course that integrated several cognitive strategies based on schema theory. Chen asserted that “a schema-theory-based model provides a useful framework for knowledge organization and information processing” (p. 569). Therefore, the program provides a learning environment that allows language learners to construct knowledge based on the information they encounter, their prior knowledge, and the way they interact with the new information. The results of Chen’s study indicate that learners not only achieved the desired learning objectives but also highly valued the collaborative tasks the program provided.

In addition, Chen (2005) proposed three principles of developing and integrating

Computer-Mediated Communication (CMC) program in EFL learning: a) materials and tasks should be designed with language and cultural-related goals; b) tasks should be provided with multiple forms; and c) interactive environments should be created in order to stimulate learning motivation. According to Chen, these underlying principles are mainly adopted from the Communicative Language Teaching (CLT) approach which emphasizes language learners' communicative competence in real-life situations. Chen argued that unlike ESL learners, EFL learners have inadequate access or exposure to the target language (TL) in their real life. It is this insufficient exposure that leads Chen to argue that in environments with little target language exposure, "communicative competence is not likely to be promoted" (p. 167). However, Chen suggested that CMC's interactive nature "not only increases both input (exposure) and output (use) of the TL that is needed for learners to promote their English proficiency but also promotes learning motivation, learning autonomy, social equality and identity" (p. 169).

The Potentials and Limitations of CALL in ELL Teaching and Learning

In addition to making efforts to develop CALL software for language teaching and learning, some researchers are more interested in conducting empirical research to investigate the potentials and limitations of CALL software in two different aspects: a) its impact on ELL teaching and learning; and b) teachers' attitudes toward its use for instruction.

Advantages of CALL Program

Research has indicated that CALL can increase language learners' motivation, enhance students' learning, connect students with native speakers of the target language, provide various sources of authentic materials, promote global understanding and experiential learning, provide a dynamic, interactive and collaborative learning environment, allow individualized instruction, offer instant feedback, and provide different modes of learning experiences (Moeller, 1997;

Egbert, Nakamichi, & Paulus, 2002; Lee, 2000; Warshauer & Healey, 1998). Furthermore, participants in CALL programs show significantly higher self-confidence than regular language learners (Robertson, Ladewig, Strickland, & Boschung, 1987) and the learner-centered environment in CALL programs can promote independent learning as well as learners' autonomy (Levy, 1997).

Some researchers further explain that CALL enables language learners to have direct contact with native speakers and access to the community of the target language. Through authentic and meaningful communication and interaction, language learners can increase their cross-cultural awareness (Moeller, 1997; Lawrence, 2002). According to Moeller, the understanding of the target culture serves as a basis and as a facilitator to acquire a second language efficiently. In addition, Gonzalez-Bueno (2000) claimed that interacting with native speakers "extends students' role as classroom learners into a wider perspective as world communicators" (p. 189), and thereby fulfilling the "communities standard" of the National Standards for Foreign Language Education (2006) that advocated language learners' use of "the language both within and beyond the school setting" (p. 64).

Moreover, research also indicates that the asynchronous nature of CALL (e.g. email, newsgroups, etc.) breaks down the boundary of time and space that exist in traditional classrooms. Consequently, it affords students more planning time to develop and refine comments and thereby, results in more language production and the increase of accuracy (Warshauer, 1997; Gonzalez-Bueno, 1998). According to Greenfield (2003), the asynchronous nature of CALL can generate a greater level of participation and can reduce learners' anxiety in that learners with introverted personalities do not need to make an immediate face-to-face response nor do they need to worry about making mistakes in front of the whole class. In other

words, those who might feel excluded in a regular classroom can feel more comfortable and have more opportunities to perform in a CALL learning environment.

Limitations of CALL Programs

Even though several studies demonstrate the potential of CALL, some researchers also point out its limitations for the following reasons. First, most of the interactions in CALL environments are still text-based. Therefore, misinterpretations and misunderstandings are likely to occur and are hard to clarify in the first place because unlike face-to-face oral communication, text-based messages can not exactly demonstrate the writer's feelings, attitudes, emotions, or facial expressions (Honeycutt, 2001). However, Warschauer and Healey (1998) claimed that this problem can be overcome once speech recognition technology is improved stating, "electronic conversations with the computer . . . will become more sophisticated with spoken as well as typed input" (p. 67).

Second, Gips, DiMattia, and Gips (2004) argued that implementing CALL into language teaching and learning might harm the equity of education because some insufficient-funded schools and low-income parents might not be able to afford the expensive cost of hardware and software.

Third, Bloom (1984) asserted that learners have a better learning outcome when they receive instructions and feedback that respond directly to their individual needs. However, as Blin (1999) mentioned, due to the limitations of computers' artificial intelligence, computer technology still fails to handle unexpected learning problems. Therefore, computers can not provide immediate responses to learners' questions as human tutors do. However, to remedy this problem, Jones (2001) proposed that to effectively implement CALL, "it cannot yet be regarded as being essentially a self-access operation" (p. 361); instead, teachers should provide guidance

and assistance in identifying learners' levels, selecting the task, relating the CALL program to a previous learned lesson and monitoring learners' progress.

Teachers' Attitudes toward CALL

Jones (2001) argued that many language teachers still remained uncommitted to CALL regardless of its documented potential, the great interest shown by students, and the large investment made by schools. Egbert, Paulus, & Nakamichi (2002) also indicated that even while some language teachers have a more positive attitude toward technology, there is no guarantee for their use of technology in instruction.

Several researchers have pointed out some reasons for language teachers' hesitation in utilizing CALL for pedagogical purposes. For instance, due to the heavy workload of teaching and administrative duties, teachers lack time to receive training in implementing CALL into their curricula or to develop suitable software to fit students' needs (Jones, 2001; Egbert, Paulus, & Nakamichi, 2002). In addition, language teachers cannot foresee the relative advantage of CALL believing that computers cannot reduce workload (Jones, 2001) or that the existing CALL software is not compatible with students' needs (Pilus, 1995). Furthermore, some language teachers are not comfortable with computer technology because they did not grow up in the Information Age as their students did and they are also afraid to be replaced by computers (Evans, 1998). Some language teachers' beliefs regarding technology lead them to be skeptical of CALL. For example, many language teachers believe that only people in the scientific field have sufficient knowledge about technology and therefore language teachers are not capable of handling scientific devices. Besides that, it is also believed that technology cannot possibly deal with subjects in the humanities and the use of technology will lead to dehumanization (Pilus, 1995). Furthermore, other reasons that lead teachers to have a reluctant attitude toward CALL

include: the complexity of computer technology (Jones, 2001; Egbert et al., 2002), insufficient technical support or professional training (Lam, 2000), lack of satisfactory materials, resources and guidelines (Egbert et al., 2002), inadequate awareness and recognition of the needs of technology implementation (Lam, 2000), and the constraints of the physical environment and social organization in schools (Egbert et al., 2002).

Jones (2001) further proposed some remedies for language teachers' infrequent use of CALL. He suggested that if teachers can be given the opportunities to receive professional training, they will be less anxious about technology, will be able to perceive the relative advantages of technology implementation and will have better knowledge of how to incorporate CALL with current curricula.

The Use of Computer Technology in ELL Classrooms in Taiwan

In terms of Taiwanese ELL teachers' use of technology in instruction, some research underscores the benefits of distance education or e-learning, or highlights the development of courses for distance education. Others emphasize developing an interactive web-based platform for Taiwanese ELL learners or on investigating the advantages and limitations of employing technology in ELL learning. In addition, some current research focuses on probing the reasons of Taiwanese ELL teachers' infrequent use of technology through quantitative approaches.

Tsai (2000) mentioned that with the help of Internet connections, distance education allows learners to access programs without worrying about the constraints of time and location. In addition, distance education courses can be presented with the aid of various multimedia in synchronous or asynchronous formats. Therefore, it can promote learners' interest and motivation as well as improve the quality of teaching and learning. It is because of these potential benefits that policymakers, educators, researchers and colleges of technology in Taiwan

have become interested in developing courses for distance education and promoting its use in higher education (Tsai, 2000). Therefore, research concerning distance education either focuses on the development of hardware and software, or on investigating students' learning outcomes, students' perspectives and satisfaction, and the approaches of employing web-based learning tools to facilitate teaching (Chiau, 2000; Pan, 2000; Teng, 2000; Wu, 2000; Yang, 2000). However, according to Lin (2000), there is a limited body of research about the teachers' perspectives on the use of distance education in higher education in Taiwan.

In addition to distance education, some researchers are interested in probing the development of a particular web-based platform and its impact on ELL teaching and learning. For instance, Huang (1998) conducted a case study of the effectiveness of utilizing synchronous CMC in a writing course in Taiwan. Huang argued that there was less language production in the computer-mediated context than the face-to-face discussion. In the CMC setting, learners' communications are text-based; therefore, it requires learners to type rapidly in order to generate efficient communication. Huang further noted that the slow typing rate results in foreign language learners' negative attitudes toward CMC discussions. However, Huang also found that in the CMC environment, learners have more equal participation and focus more on the topics of discussion. Furthermore, Li (1998) studied the use of CMC in EFL teaching and learning in Taiwan. Li concluded that compared with other countries in the world, the CMC applications in Taiwan are lacking in variety and are limited to the use of email, discussion lists or bulletin board systems.

Kang (2000) asserted that even though Multiple-user dimension/dungeon Object Oriented (MOO), a type of CMC, has been widely employed in ELL learning context in other countries, there is still limited research on the use of MOOs in Taiwan. Accordingly, many Taiwanese ELL

teachers are not familiar with the potential of MOOs in empowering students' foreign language learning. Additionally, according to Kang, there are few empirical studies regarding the use of MOOs for EFL learning in Taiwan. Liou (2000b) also pointed out that there is little literature concerning how language learning websites should be designed based on learning theories that match Taiwanese students' needs. Therefore, because of the lack of knowledge and resources for MOOs, Liou (2000a, 2000b, 2000c) conducted a government-funded project called "ForMOOsa." ForMOOsa is designed based on Vygotsky's sociocultural theory and language learning theories emphasizing the social construction of knowledge. This project targets the English learners in Taiwan and it provides learners with a web-based synchronous communication platform in which learners can be situated in an interactive learning environment to practice English with the system or with other peers online. In other words, ForMOOsa is a virtual learning environment where learners can acquire language skills and construct knowledge of the target culture through simulation.

Research was conducted to investigate students' learning outcomes in the context of ForMOOsa as well as teachers' perspectives of ForMOOsa. It indicated that students' computer skills and English proficiency improved and students' learning motivation increased. However, students needed more time to adapt themselves to the learning environment in ForMOOsa because of their beginning level of English proficiency and slow typing speed. In addition, students had difficulties in generating efficient communication in the online chats because they failed to respond immediately. Furthermore, teachers had a positive attitude toward the use of ForMOOsa, especially in using it for reading and writing courses. Teachers who used ForMOOsa also reflected that in order to generate successful communication and collaboration among students, it was necessary to devote more time in lesson planning (Chien, 2002; Chen,

2003; Tsai, 2002).

With respect to the reasons for Taiwanese ELL teachers' infrequent use of technology for instructional purposes, Chen (2006) argued that the competition among universities for recruiting students and earning a higher academic reputation leads administrators to believe that creating a high-tech learning environment is necessary for colleges and universities to survive in the long run. However, while hardware and software was purchased for teachers without offering them sufficient and continuous professional training, teachers have difficulty matching the software to the curriculum. In the mix-method study, Chen asserted that teacher training, time, institutional support, and teachers' beliefs about technology are the factors that determine Taiwanese ELL teachers' use of technology in language instruction. Chen further suggested that more professional training should be provided to teach teachers how to incorporate technology in the current curriculum and how to develop materials based on theoretical foundations.

Pai (2005) also conducted a quantitative study investigating Taiwanese ELL teachers' use of technology in instruction. The study indicated that class size, the number of labs, teachers' personal characteristics, the complexity of the innovations, colleagues' and institutional support, and how resources are scheduled are the major factors that determine the frequency of teachers' use of technology (Pai, 2005). Pai further identified that the availability of hardware and software is unbalanced and more software needs to be developed to fit the real needs of teachers and learners. In addition, teachers should also be involved in the decision-making process so that administrators may understand teachers' "real" concerns.

Pilot Study

Introduction

In Taiwan, there are two education systems. One is the “General Education System” and the other is the “Technological and Vocational Education System.” The federal government regulates private and public colleges and universities in both systems. There is a regulating body known as the “Department of Technological and Vocational Education” that evaluates and credentializes public and private universities of technology and colleges of technology. Universities of technology are more prestigious than colleges of technology. Currently, there are 46 colleges of technology and 29 universities of technology in Taiwan.

Colleges of technology normally hope to become universities of technology. This would offer them more prestige and more students. For private colleges, there is a clear concern with respect to attracting an increasing number of students. The way that colleges of technology become universities of technology involves an evaluation and credentializing process in which English language instruction and technology implementation feature prominently among other factors. Therefore, there is a lot of pressure on colleges of technology to nurture their English language instruction and technology implementation if they want to become universities of technology. If a private college of technology does not pass the evaluation process, the Ministry of Education might ask them to reduce their class size or limit the number of student they may recruit. They may also be denied funding from the government as a kind of punishment for not providing what they see as a good quality education for their students. This pressure makes them believe that they must promote technology implementation and English language instruction so that they will do well in their evaluations. Therefore the implementation of CALL in colleges of technology is highly desirable by administrators of colleges of technology in Taiwan.

Since implications from the existing literature have directed us to pay particular attention to teachers' concerns in terms of technology implementation, the present study will explore Taiwanese ELL teachers' central concerns with respect to CALL implementation in Taiwanese colleges of technology in the context of this evaluative pressure. In connection with this research agenda, I conducted a pilot study in Taiwan during which I interviewed two Taiwanese ELL teachers at separate colleges of technology in Taiwan. The focus of this pilot study was to investigate the participants' use of technology for instruction in their daily practice as well as actions they continually employ in dealing with top-down decisions.

While technology implementation is highly encouraged by the Ministry of Education in Taiwan, the number of high-tech facilities schools provide (such as hardware and software, and the number of language learning laboratories) and the degree of teachers' use of technology (such as posting their syllabi and teaching materials online) are used as criteria for the evaluation of education quality. In the context of the pressure brought to bear by this far reaching policy, many schools promote technology implementation without fully consulting teachers' opinions.

The two participants I interviewed are ELL instructors in two different colleges of technology and both schools believe that a tech-rich environment can facilitate teachers in teaching and enhance students' learning achievement. Therefore, in both colleges, a high-tech facility is provided for teachers and students. However, these two participants' beliefs about and attitudes toward technology are different. One instructor aims at creating an interactive and student-centered learning environment. Promoting students' learning motivation and developing their desire for independent and life-long learning is the ultimate goal of teaching in this teacher's view. As the participant mentioned:

“I involve students in selecting the materials and the topics to be covered. I care more about whether I can promote students’ learning motivation and their self-confidence. I think the interactive CD-ROM that I use can help me reach this goal.”

In addition, this participant has a positive attitude toward technology and incorporates technology in instruction frequently and voluntarily. As the participant stated:

“I use technology in every class session. The major purpose of implementing technology in instruction is to provide students with multiple choices of learning materials. I believe that learning through multimedia can fit with individual’s differences in learning style and can satisfy individual’s needs and interests. I believe that as a teacher, I should respect every individual’s differences and I should provide them with various types of materials. I think I have the responsibility to tell them where they can find the resources to facilitate self-directed learning. I also want them to know that even without a teacher; they still can use those resources to learn on their own in the future.”

The other participant uses a more traditional and teacher-centered strategy in instruction. Covering as much of the texts and helping students to acquire the basic skills (such as memorizing vocabulary, grammatical rules and sentence structure) are the ultimate objective of teaching for this second participant. As the participant claimed:

“I think teachers have the authority in a classroom. Teachers have the responsibility to display our ideas and knowledge to students. Therefore, teaching is like a presentation. I can’t spend too much time on technology because I have a lot of materials to cover. We only have limited class time.”

This participant has a hesitating attitude toward technology and technology is viewed as “an unnecessary tool” in language teaching and learning. Using technology is only in compliance to the policy. As the participant asserted:

“I personally believe that the computer is just a tool, and we cannot give too much credit to it. I think it does have some impact on teaching and learning, but I doubt how much it will be. I always believe that teachers’ lectures can give students 70%-80% assistance. Technology can only give them less than 20% help. To me, there is not much difference in using technology in enhancing students’ learning achievement. Therefore, I view technology as merely an accessory. I also believe that learning should be self-motivated and it is the students’ responsibility. If they do not have high motivation in learning English, they still do not want to learn even with the assistance of computer technology.”

Results and Implications

The findings from the pilot data show that teachers believe that technology is neither a panacea nor the answer to various issues they encounter in the actual classroom everyday. It is apparent that teachers nowadays are all aware that technology implementation is a trend in language teaching and learning, no matter whether they use it or not. As one of the participants stated:

“I think that technology implementation is a trend and I believe that schools will continue promoting it. In my school, due to the lack of faculty members, every teacher has to teach several courses. If teachers can focus only on one course, we will have time to incorporate technology in our teaching. So, the reality of our daily practice will inhibit us from implementing technology in instruction.”

Furthermore, regardless of teachers' negative or positive attitude toward technology implementation, they all agree it has a certain degree of benefit and they are aware that schools and policymakers are promoting it, purchasing the hardware and software, offering professional training and offering technical support. However, since college professors have the right to determine their teaching strategies and the use of computer technology for instructional purposes is voluntary, their use/nonuse of computer technology still depends on their beliefs (about the technology and their teaching philosophy) and attitudes toward it.

From the pilot study, I also found that teachers more or less use computer technology regardless of their positive or negative attitude toward it. The difference lies in the degree of use (ranging from frequently use it to rarely use it) and the purpose for using it (ranging from using it for the purpose of communication and interaction to the purpose of preparing teaching materials, grading, checking email and searching online information). However, when they face the reality of daily practice (time pressure, technical problems, administrative duties, and lack of time and computer skills to develop tech-rich teaching materials on their own), they choose not to use technology because it is time-consuming and incompatible with the current curriculum. As one of the participants noted:

“Without the evaluative pressure, the use of technology in instruction really depends on whether I have free time or not. To me, teaching is just a job and I still have other administrative work to do. After all, developing a webpage or using technology will not impact language teaching and learning. There is no difference anyway. If I have to choose one teaching material between textbooks and computer technology; such as webpages, PowerPoint, interactive CD-ROM, etc., I will definitely go for textbooks.”

Furthermore, one participant even suggested that the purpose of using technology is just for credentializing schools as the government uses the degree of technology implementation as a criterion for evaluating teachers' performance and the educational quality schools provide to students. As one of the participants mentioned:

“Developing a personal webpage and technology implementation is only for the purpose of passing the evaluation regulated by the Ministry of Education. I don't think the evaluation can really determine the quality of education a school provides to students. I am glad that the school did not force teachers to develop a fancy webpage or use technology a lot in instruction. I am glad that the school did not forget that we are English teachers and we are not computer technicians.”

Therefore, having this perspective in mind, once the evaluation is done, the usage rate drops and the web pages the teachers made in preparation for the evaluations no longer get updated because teachers feel no need for using it. It is apparent that the actions teachers take in response to top-down decisions are consistent with their beliefs about technology implementation and from their actions we can learn about their beliefs.

The findings from my pilot study also direct me to believe that the context teachers are situated in will impact their belief and practice. Zeichner (1994) and Berlak and Berlak (1981) mentioned that teacher thinking cannot be separated from social, cultural, and political factors embedded in the contexts in which these teachers are embedded. I found that in responding to the policies made by the Ministry of Education, these teachers exhibited different attitudes toward these policies. One of the teachers was strongly encouraged to implement technology. Although this was done in rather implicit way, it still was a top-down decision that came from outside the

school that the teacher must be in compliance with. The other teacher was allowed more freedom to make decisions about the use of technology and, interestingly, used it more frequently than the first and had a more positive attitude about it. This clearly implies that context plays an indispensable role and must be a focus of further inquiry.

Summary of Literature Review and Pilot Study

Pre-existing literature shows several factors that result in ELL teachers' skepticism of technology and therefore cause their infrequent use of technology for instructional purposes. It includes the lack of equipment, insufficient technical support, inadequate professional training, insufficient awareness of the relative advantages of technology, the lack of satisfying materials, inadequate guidance in terms of incorporating technology in the current curriculum, the constraints of the physical environment (such as large class size), and the social organization of schools. In the ELL context in Taiwan, because of the policy, the problems of inadequate equipment, technical support and professional training have been resolved. However, from the pilot study I conducted, teachers' awareness of the relative advantages of technology implementation is not necessarily promoted. They might use computer technology for limited purposes (such as preparing teaching materials, emailing and searching online resources) because there is insufficient guidance to lead teachers to incorporate technology into their existing curricula. In addition, in dealing with heavy workload, problems in their daily practice, and the policy of technology implementation, teachers' teaching philosophy and their belief about technology do affect their usage of technology. If teachers consider students' learning motivation over their achievement and view students as active learners, technology will be viewed as a powerful tool to facilitate teaching and learning. The implementation of technology will therefore become a voluntary activity. However, if teachers believe that teacher-centered,

memorizing, and recitation are more efficient and effective ways of learning, technology will be viewed as merely a tool that will not improve the quality of teaching and learning. Therefore, technology implementation will become an obligation and will not be continually employed in the long run. Finally, the context teachers are situated in also impacts their actual use of technology. If schools view technology implementation as a way to gain credentials, teachers tend to use technology for the purpose of compliance.

Existing literature and the findings from my pilot study have led me to theorize that: teachers' beliefs about teaching and learning, teachers' beliefs about the potential of technology, and the context teachers are situated in, are the three constructs that impact their use or nonuse of technology for instructional purposes. These three constructs also underpin the actions they take in response to top-down decisions with respect to the implementation of technology.

Therefore, to better understand the phenomenon of Taiwanese ELL college instructors' infrequent use of technology, it is essential to further investigate ELL instructors' central concerns (beliefs), the actions they take in response to top-down decisions (action), and the context they are situated in. According to Zeichner (1994), teacher thinking cannot be separated from social, cultural, and political factors embedded in the contexts in which these teachers are situated. We know that teachers' thinking is relevant to their practice. Therefore, it is relevant to their use or lack of use and their attitude towards and their beliefs about computer use for ELL instruction. Therefore, these three constructs (action, belief, context) cannot be separated from each other in exploring this issue.

Theoretical Framework

Introduction

An author is a member of a discourse community. A particular discourse community

makes certain assumptions about the world. Members of such a community use particular language to deliberate their view of knowledge. Therefore, when undertaking a study, researchers take a philosophical stance and this is often referred to as *paradigm* or *worldview*, that shapes their practice of research. According to Skrtic (1995), a paradigm is a worldview that implicitly guides a person's beliefs or presuppositions. Guba and Lincoln (1994) defined it as the basic belief system that guides the investigators' actions. Kuhn (1970) referred to it as a way of seeing or as a conceptual map that generates corresponding theories and assumptions that defines the notion of entity and guides the way people behave.

In the qualitative research tradition, there are a number of paradigms that guide educational inquiry and these paradigms can be distinguished and discussed in terms of four broad categories or lenses: ontology, epistemology, ideology and methodology all of which are interconnected and interrelated (Creswell, 2007; Guba & Lincoln, 1994). By examining these lenses, we can see into researchers' philosophical bases and how their perspectives guide their actions in inquiry. We can also better understand what is considered "valid" or legitimate by a researcher and we can then tell what the limitations of that particular perspective and value are.

Ontology, Epistemology, Ideology and Methodology

An ontology is a philosophical assumption about the nature of being or ultimate reality (what is assumed to be real and what the nature of reality is). Epistemology, on the other hand, refers to the nature of knowledge (how one comes to know and how one views the world). An ideological stance deals with the issue of power relationships; hence, it tends to look at political and economic systems. When looking through an ideological lens, we focus on who benefits from the power allocation. A methodology emphasizes the process of getting to know the unknown. When putting on a methodological lens, one sees a particular paradigm in operation.

When aligning with a particular discourse community, one puts on a certain lens and makes certain assumptions of the world. It makes it easier for people in the community to have greater communication and collaboration and to refine clusters of ideas. When one puts on a particular lens, the most essential issues are foregrounded while the others are backgrounded. Adding too many lenses may create a blur.

Functions of a Theoretical Framework/Conceptual Framework

A theoretical framework is the discipline, the lens, or the worldview that structures the study. It functions as a scaffolding system that guides researchers to frame the research questions, to collect data, to analyze the results, to interpret the findings and further expand the knowledge base in the field. A particular discipline has its own particular vocabulary, concepts and theories; therefore, a theoretical framework also indicates researchers' particular interests, puzzles and questions of the issue (Merriam, 1998).

According to Maxwell (2005), a conceptual framework "is something that is *constructed*, not found. It incorporates pieces that are borrowed from elsewhere, but the structure, the overall coherence, is something that *you* build, not something that exists ready-made" (p. 35). To construct a conceptual framework, researchers can adopt the ideas from four sources: "(1) your own experiential knowledge, (2) existing theory and research, (3) your pilot and exploratory research, and (4) thought experiments" (p. 37). In short, a conceptual framework can be the insights researchers gain from existing literature combined with the implications they find in their data driven studies. Pilot studies offer the researcher a data driven means for focusing the breadth and depth of subsequent inquiry. Pilot studies also allow the researcher to focus on the central concerns of the research participants rather than on pre-existing assumptions or naïve opinions that may be derived from extant literature or frameworks (Maxwell, 2005).

Theoretical Framework for This Study

Regarding Taiwanese ELL college instructors' infrequent use of technology for instructional purposes, the existing literature and findings from my pilot study have directed me to pay particular attention to teachers' beliefs, teachers' actions and the context teachers are situated in. In addition, in order to better understand technology implementation in educational contexts, the diffusion of innovation, the relationship between human beliefs, attitudes and behaviors, and teachers' resolution of dilemmas in daily practice, I reviewed the assertions and theories developed by Cuban (1986, 2001, 2004), Rogers (2003), Bem (1970), and Berlak and Berlak (1981).

In this section, I will first synthesize the deep assumptions of Cuban (1986, 2001, 2004), Rogers (2003), Bem (1970) and Berlak and Berlak (1981), and then explain how these four authors' underlying assumptions can inform the issue of technology implementation in the educational context. Finally, an A-B-C (Action, Beliefs, Context) model will be developed and will serve as the theoretical framework for underpinning this inquiry. This theoretical framework offers me a lens for analysis and serves to guide the inquiry.

Cuban's Philosophical Assumptions

A positivist ontological assumption posits that there is an ultimate reality "out there." Positivists in the social sciences believe that truth/reality can be found by looking at patterns of individual and group behavior. We then can conclude a time and context free generalization. Therefore, this pattern can be used to predict or control various aspects of social life. In other words, truth can transcend opinion and personal bias regardless of historical or cultural context and we can make predictions based on previous behaviors. Positivists emphasize objectivity, accountability, validity, reliability and avoiding bias. They focus on external, observable factors

and are inclined to transform these into numbers or comparable quantities. Anything that cannot be observed objectively will be regarded as meaningless. Therefore, they use statistical operations to draw comparisons among persons and groups. They look for generalizations based on independent and dependent variables (Bredo, 2006; Denzin & Lincoln, 2005; Skrtic, 1995).

Cuban is a practical and empirical historian who uses a “scientific approach” (control group vs. experiment group) to find patterns in successive waves of technology implementation (radio, film, instructional television, computer-assisted instruction and computers) in classroom settings. Based on the stories he collected, Cuban documents the generalized failure of educational technology. But with his data and as a historian, he is limited to the documentation he has. Therefore, I see him as more in a positivist paradigm. Although Cuban is not a hard core positivist, he does use the language that fits the rhetoric of positivists and his inquiry is both quantitative and qualitative in nature. Further, Cuban is critical of the broad scale and ill-informed implementation of technology in schools. In this way, connections with critical theorists may be suggested. In his research, voices of participants were heard through narratives and some assertions are supported with statistical evidence. Ontologically, Cuban believed that human beings have free will and are by no means passive adopters. They choose what is suitable for them instead of submissively accepting anything imposed on them. Epistemologically, Cuban believed that facts can be more properly interpreted with certain methodologies. One of the legitimate methodologies is to have teachers’ and students’ voices heard, and this can be achieved by discovering how computers were used in the classrooms through participant observation. As Tyack and Cuban (1995) claimed, “in the top-down process of advocating and implementing technology, teachers were rarely consulted, though it was mainly their job to make it work in the classroom” (p. 121). Cuban calls into question privileged voices in the

implementation of technologies in public schools.

Cuban cared about hierarchy and power relationships in school contexts in terms of technology implementation. Cuban (1986) asserted that “what boosters of electronic technology frequently label as teacher stubbornness in embracing innovations can be viewed from the perspective of power: whose questions count?” (p. 67). Cuban (1986) argued that “the most common direction for school change is, and has been, top-down” (p. 54) and therefore, excluding teachers’ voices in the decision-making process will result in the failure of the implementation of innovation. Also, in The Blackboard and The Bottom Line: Why Schools Can’t Be Business, Cuban (2004) used two cases of educational reform in American history as examples to illustrate how the business community’s intervention impacts educational policies and systems. His whole argument centers on how social, cultural, economic and political factors embedded in the society impact school reform while educators’ voices are unheard. Therefore, Cuban (2004) asserted that “Legitimacy (and power) in making changes rests with those at the top of the organization, not those at the bottom, who have different organizational views, experience, influence and values” (p. 36).

In addition to the power issue, Cuban (1986) cared about the culture of the teaching community and how school and classroom structure shapes teachers’ beliefs, daily practice and pedagogy and hence, how those factors relate to teachers’ adoption or resistance of technology implementation. Therefore, he argued that teachers should be involved in the decision-making process in order to determine whether the perceived benefits of technology fit the belief system, the needs, and the culture of the teaching community. Cuban’s concerns regarding power relationships align with critical theorists’ notion of “hidden mechanisms” in society that cause decisions to be made by the dominant authority (e.g. Apple, 2004). Moreover, Cuban cared about

involving multiple perspectives from different groups reflecting critical theorists' concern for the voices of the oppressed. Even though Cuban does not use the philosophical language of the true Frankfurt School critical theorists, he is critical in his view of need for action that empowers the disenfranchised and his major concerns reside in educational technology.

Cuban's Major Claims

Cuban (2001) argued that the introduction of technology use in school settings originates from tech-promoters' belief that "if technology were introduced to the classroom, it would be used; and if it were used, it would transform schooling" (p. 13). Although this claim shows tech-promoters' positive expectation in that computers will revolutionize teaching and learning, Cuban used the examples of three high-tech schools (two high schools in the Bay Area and one at Stanford University) to assert that the implementation of technology for pedagogical purpose in schools is still inadequate. Cuban noted that "educational policymakers extravagantly promoted new and powerful technologies, [and] most teachers and students now have far more access than previously, but classroom use continues to be uneven and infrequent (p. 93). Further, Cuban pointed out that these three schools have invested a large amount of budget on computer equipment and Internet access. However, Cuban mentioned that "teachers reported that they largely used school computers to prepare for classes rather than for direct instructional use" (p. 85), and "'e-learning' in public schools has turned out to be word processing and Internet searches" (p. 178). Computer facilities are intensively used by students and faculties to do research, to write, to communicate and to prepare for course materials rather than to integrate it into the curriculum design. Therefore, Cuban questioned the worthiness of investing money on purchasing the hardware and software for pedagogical use.

Cuban (1986) asserted that "the major resistance to converting classrooms into technical

enterprises . . . has come from the organizational realities of school and classroom life and the teacher's holistic perspective on what's important to young people" (p. 90). In addition, Cuban stated that "teachers seldom were consulted or involved" (p. 36); and therefore there is a mismatch between the beliefs of the implementers and teachers and then, "token compliance is a common response" (p. 55). In conclusion, the disappointing results of technology implementation in educational contexts can be attributed to three major reasons: a) the restrictions of the organizational realities in school settings; b) the conflicting values and beliefs regarding schooling between educators and policymakers/business leaders; and c) the top-down decision-making process of technology implementation.

First of all, the daily practice in the classroom is far more complex than what business leaders and political officials can imagine. Therefore, the implementation of new policy and the attempts to change the school culture actually underestimates the complexity of teaching practice (Cuban, 2004). Second, Cuban argues that the assumptions of teaching, learning and schooling between policymakers/business leaders and educators are fundamentally different. Policymakers and business leaders pay particular attention to outcomes, productivity, efficiency, effectiveness, accountability and cost. On the contrary, educators are concerned more about developing students' intellect and character (Cuban, 2004). Third, by developing principles for curriculum design and for determining "success" without consulting teachers' concerns and needs, technology implementation will result simply in organizational compliance where school and classroom are viewed as workplaces; where teaching is defined as a mechanical process; and teachers are treated as employees who follow imperatives established by policymakers (Cuban, 1986). Therefore, simply placing computers in the classroom cannot guarantee a success in educational reform in terms of technology implementation unless it goes along with a well-

rounded pedagogy.

In order to fill the gap between policymakers' expectations and teachers' actual use of technology in schools, Cuban urges administrators and policymakers to take serious account of existing school structure (e.g. the arrangement of the physical space in the classroom, the rigid scheduling of school time, etc.), the design of existing curriculum, the culture of the teaching professions (e.g. teachers' assumptions of teaching and learning, teachers' beliefs and attitudes toward technology) and the major purpose of schooling when promoting technology implementation (Cuban, 1986).

Rogers' Philosophical Assumptions

By analyzing a large amount of data across different fields over a long period of time, Rogers (2003) intended to generalize patterns of human beings' responses (behaviors) to stimuli (the diffusions of innovation). This is not to say that Rogers is a hard core positivist because he still cares about the issue of power relationship (who benefits from the diffusion of innovation: the socioeconomic advantaged group or the more disadvantaged group?) and he believed that the meaning of an innovation is gradually worked out through a process of social construction (e.g. his claim that the information exchange process involved interpersonal networks). He cared about cultural and social issues; however, unlike other postpositivists, he only talked about these issues as they relate to the diffusion of innovations. His major focus throughout his work resides in generating a general model of the rate of innovation adoption, and in categorizing various types of adopters as well as their sociocultural characteristics and economic status. His ultimate goal is to develop patterns of diffusion processes that have been found across cultures, innovations, and the people who adopt them. In other words, he is making a metanarrative of innovation and he aims at reducing bias and generating a grand theory that is objective and

universal so that the “truth” of his theory can transcend time and context. Rogers (2003) stated that “diffusion was a *general process* . . . and is a universal process of social change” (p. xvi). This generalization leads me to believe that his ontological commitment is oriented in positivists’ (objectivist) worldview. Furthermore, in suggesting directions for future research, Rogers (2003) claimed that “in general, a much wider range of innovations should be studied in diffusion research to overcome the pro-innovation bias” (p.113). When conducting research, he provided dependent variables and independent variables for measurement and he aims at reducing “bias” in order to reduce uncertainty and to reach “objectivity.” This goal of objectivity also aligns with the conceptual affirmations of positivists.

Rogers’ Major Claims

Rogers (2003) defined an innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p.12). He viewed diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system” (p. 5). In other words, Rogers identified four crucial elements relevant to the diffusion process: the innovation, communication channels, time, and a social system. These four components are essential because of a) the attributes of an innovation determine the rate of adoption; b) the communication channel is the means by which information about the innovation is diffused; c) the sequence of the innovation-decision process is time-ordered; and d) the social structure sets a boundary so that the system norms, roles of opinion leaders and change agent, types of innovation-decision and the consequences of innovation can be identified.

Rogers (2003) described five attributes of innovations that affect the rate of adoption: a) relative advantage: whether the potential advantages of the innovation is perceived as better than the ones it substitutes; b) compatibility: whether the innovation can correspond to the existing

values and belief systems within the community as well as the users' previous experiences and needs; c) complexity: whether the innovation is difficult to understand or adopt; d) trialability: whether the innovation is available for trial before adopting it; and e) observability: whether there is any observable benefits/outcomes of the innovation for the users to evaluate before adopting it. In short, once the functions of an innovation fit the needs of the intended adopters, it will be adopted more effectively.

Rogers (2003) categorized adopters into five different types: innovators, early adopters, early majority, late majority and laggards. This division is based on the length of adopters' innovation-decision period, their socialcultural characteristics, and their attitudes toward innovations. Regardless which type of adopter one belongs to, Rogers generated a model procedure that one will go through before adopting the innovation. Rogers viewed the innovation-decision process as "an information-seeking and information-processing activity" (pp. 20-21) and it usually involves five steps in a time-ordered sequence: knowledge, persuasion, decision, implementation, and confirmation. Adopters first create an awareness of the innovation and then internalize the new idea at the knowledge-gained stage. In this process, individuals look for external factors to reduce uncertainty to help them perceive the potential advantages of the innovation before reaching the decision stage. Rogers noted that at the persuasion stage, the interpersonal channel is a key factor that determines whether the information can be effectively transmitted within the community and hence, whether an innovation can be successfully adopted. Rogers argued that individuals who are homophilous (people who share common personal and social characteristics) are bound within a similar social network. Information and new ideas tend to be diffused most effectively when communicated between homophilous individuals. For instance, if a top-down decision to implement technology in schools fails to reach its expected

success, we might expect that this might come from an incongruity between policymakers' worldview and teachers' central concerns. At the decision stage, individuals make decisions based on their experiences by experimenting with the innovation. At the implementing stage, innovations might be modified to be compatible with adopters' existing needs and values (personal or social). At the confirmation stage, individuals seek reinforcement for continuing adopting the innovation or they might discontinue their use of the innovation.

Rogers' (2003) notions of diffusion of innovation at the individual level have further been expanded to involve issues of diffusion within organizations because he believed that "the causes of a social problem lie in the larger context or system of which the individual is a part" (p.119). Therefore, the failure of a particular diffusion is not an individual-level problem; rather, the system might be responsible for it. Rogers defined an organization as a stable system in which individuals achieve common goals through collaborative work. Within the structure of the system, positions are organized in a hierarchical structure that clarifies the power relationship and the labor division. Therefore, if the diffusion of innovation is dominated by a few authorities, the success of adoption will be discouraged.

Bem's Philosophical Assumptions

Throughout the whole study, Bem (1970) aimed at developing a generalization by using a scientific approach to investigate the relationships between human beliefs, attitudes, and behaviors. All data is collected in quantitative methods instead of having rich descriptions from the participants. Bem argued that human behaviors are predictable and "that predictability could be construed as evidence for the clarity of our logic and the internal consistency of our belief systems" (p. 70). This notion shows that Bem believes that there is a pattern to be generalized in individuals' behaviors. Once the pattern is found, we can use it as a predictor to foresee

individuals' behaviors under similar conditions. Therefore, ontologically, Bem is more in the positivism orientation and believes that there is an ultimate truth out there to be discovered. In addition, it also infers that epistemologically, Bem believes that truth can be discovered through objective investigation and bias should be avoided in the process of inquiry. This can be further proved by looking at the methodology Bem applies to his study. To attain validity, reliability and objectivity, Bem proposed a hypothesis and then conducts experiments in a controlled setting to verify the proposed theory. Bem claimed that "to obtain more support for the hypothesis, I conducted an experiment in which 'truth' and 'lie' signals were 'raised from birth' in the laboratory so that their meanings would be unambiguous" (p. 60). In studying the relationships between human beliefs, attitudes and behaviors, he cares about the cause and effect. For example, in order to better understand how human beings' overt behavior can be used as a guide to infer their internal state, in the same study, Bem conducted an experiment to test human beings' reaction to electric shocks. In other words, putting on behaviorists' lens, Bem cared about how a stimulus (cause) can have a change in individuals' behavior (effect) and how this change in behavior can infer individuals' internal state.

Bem's Major Claims

From psychologists' perspectives, Bem (1970) investigated the relationships between human beliefs, attitudes, emotions, and behaviors. He aimed at generalizing how individuals' beliefs and attitudes can be changed and how external forces impact ones' beliefs, attitudes and behaviors. Bem defined "belief" as human beings' capacity to perceive the relationship between things. Bem argued that "many beliefs are the product of direct experience" of our interaction with others and the environment within which we are situated (p. 5). Bem also defined "attitude" as human beings' likes and dislikes. He asserted that our attitudes "have roots in our emotions, in

our behavior, and in the social influences upon us” (p. 14). According to Bem, human beings’ internal belief system is coherent with their attitudes. This means that we possess a more positive attitude toward things we believe to be true, and on the other hand, if something is more desirable, we believe it is true. In addition, Bem suggested that “if an individual is induced to engage in behavior that is inconsistent with his beliefs or attitudes, he will experience the discomfort of “cognitive dissonance”, which will motivate him to seek a resolution of that inconsistency” (p. 55). In other words, human beings have the tendency to possess cognitive consistency and therefore, the inconsistency can function as a stimulus that motivates human beings to make a change in their beliefs and attitudes. In the field of psychology, there has been a debate over the cause-and-effect sequence of the change in behavior and attitude, and Bem claimed that “behavior change causes attitude change” (p. 66). Therefore, to change one’s beliefs and attitudes, we can start from changing one’s behaviors first.

Bem (1970) suggested that individuals’ beliefs, values and attitudes are also shaped by the social influences. Social influences include the information mass media transmits to the general public, the influences from others in the interpersonal social network, and the social norms generated within the community to which the individual belongs. Similar to Rogers’ assertion, Bem also claims that the most effective communication channel for transmitting information and delivering persuasion is mass media. However, Bem mentioned that “even in our technologically advanced society, there appears to be no substitute for direct personal contact” (p. 75) and “personal contacts influenced opinions and buying decisions more than did the mass media, regardless of the subject matter” (p. 76). In other words, people we interact with in our daily life have greater influences on our beliefs and behaviors. In addition to the influences of interpersonal network, social norms also guide individuals’ beliefs, attitudes and

behaviors. According to Bem, social norms are created by opinion leaders and are also embedded in the community we belong to. Opinion leaders function as the mediator in the process of diffusion of innovation because they not only transmit information but also demonstrate to other members what the appropriate behaviors and attitudes are. Furthermore, Bem asserted that “groups regulate beliefs, attitudes, and behaviors through the use of social reward and punishment” (p. 79). Therefore, when a change is made within a group, individuals are also likely to follow the change.

In short, the major claims Bem (1970) proposed also pinpoint the interrelated relationship between individuals’ beliefs, attitudes and the context. In particular, the social norms within the context and the interpersonal network have a great impact on guiding and changing individuals’ beliefs about and attitudes toward innovation.

Berlak and Berlak’s Philosophical Assumptions

Ontologically, Berlak and Berlak (1981) believed that “teachers, head teachers and students are not merely passive objects” (p. 24). Instead, they were conscious of how their perceptions are shaped by the social, cultural, political forces and they also have the capacity to reflect on the external forces. Epistemologically, their notions align with social constructivists’ assumptions in that meanings are socially constructed. First of all, Berlak and Berlak (1981) asserted that “persons’ lives are shaped by their experience in the institutions of their society” (p. 24) and “persons take meaning from everyday experience” (p. 202). Second, social constructivists view socially constructed reality as an ongoing and dynamic process; and through negotiation and interaction, the taken-for-granted knowledge of reality can be reinforced or reproduced (Creswell, 2007). In other words, human beings have the capacity to adapt in, to adjust to and to attempt to alter the social structure. To the point that meanings are socially

constructed and the process is ongoing and dynamic, we can find a similar statement in Berlak and Berlak's study where they found that teachers' patterns of resolution reflect their different perceptions of the world as their roles in the society change (the roles as educators, administrators, parents and citizens); therefore, the patterns of resolution are not static; instead, they change over time. As Berlak and Berlak stated, "the meanings teachers take from experience . . . 'of being in different roles over their lifetime' continuously affect their patterns of resolution and their views (p. 214), and "the views that have been presented to her in these roles were not coherent and consistent with one another" (p. 215). To further articulate the idea that the taken-for-granted reality can be reproduced, Berlak and Berlak suggested that once the meanings students took from schooling become inconsistent with the experiences they have in reality when they turn into adulthood, they will question "the legitimacy of the relationships between knowledge, status and power that prevail in the society, and to press for changes in these relationships" (p. 222). In other words, as Berlak and Berlak further stated, "the children will, of course, continue throughout their lives to revise the meanings" (p. 203) and hence a social reproduction and change will emerge.

Methodologically, Berlak and Berlak (1981) suggested future researchers to engage teachers in the process of inquiry in order to further explore the issue of schooling in depth. This conception comes from the underlying principle of critical inquiry that research must be conducted by "require[ing] active involvement of the persons in the situations under study" (p. 231).

Berlak and Berlak's Major Claims

In order to portray the complexity of school life, Berlak and Berlak (1981) documented their observations of the daily events, their impressions, questions and judgments, as well as their

interview with teachers, administrators, school staff and students. From the field notes they collect and the transcription of the rich narratives of the participants, they create the language (which is called “dilemma language”) to illustrate teachers’ patterns of resolution of the dilemma they face everyday in the classroom. Berlak and Berlak (1981) argued that teachers’ ontological assumption of teaching, learning and schooling determine their patterns of resolution in their daily practice. In other words, teachers’ patterns of resolution (actions) and their beliefs have a reciprocal relationship. The purpose of developing the “dilemma language” is not to categorize teachers into mutually exclusive types because Berlak and Berlak (1981) believed that “generalizations were true and not true” (p. 22). In doing so, it will just oversimplify the complexity of the daily practice in the school context. Instead, Berlak and Berlak made an effort to “develop a language, a set of concepts that would more adequately represent the complexity we had experienced” (p. 22) and then use the language as a framework to examine the larger social, cultural, economic and political issues embedded in everyday schooling experiences (the macro in the micro) in hoping to provide implications for how human consciousness, culture, social context interplay with one another in the process of social change. According to Berlak and Berlak, teachers’ patterns of resolution can be affected by their schooling experiences as a student; the professional training they received; their experiences with students, parents, colleagues, and administrators as well as the perspectives of those people; their personal and social experiences as parents and citizens; students’ social histories that they bring into the classroom; and the organizational and physical structures of the school. In other words, teachers’ beliefs are shaped by their experiences in a social context and their beliefs will have a significant impact on their practice. Therefore, to better understand how teachers resolve the dilemma they encounter in their daily practice in school, researchers should investigate teachers’ experiences

and beliefs with respect to teaching, learning and schooling as well as examine the sociocultural context within which they are situated. In short, a rich description of the context, together with teachers' beliefs and actions, can provide us a framework to help us better understand the related issues of schooling.

Discussion

Cuban (1986) pointed out that there is a gap between the beliefs and expectations of policymakers/administrators about the potentials of computer technology and the beliefs and practices of classroom teachers. Cuban directed us to pay particular attention to three possible factors that affect teachers' infrequent use of computer technology for instruction: a) the restrictions of the organizational realities in school settings; b) the conflicting values and beliefs regarding schooling between educators and policymakers/business leaders; and c) the top-down decision-making process of technology implementation. Cuban (1986) also claimed that "policy makers need to understand that altering pedagogy requires a change in what teachers believe" (p. 109). Cuban's assertions lead me to believe that in order to bridge the gap between the policymakers'/researchers' perceived benefits of computer technology and teachers' infrequent use of technology for instructional purposes in school settings, it is not only necessary to engage teachers' voices in the decision-making process, but it is also essential to further investigate the interrelationships between teachers' beliefs, attitudes, actions they take in response to the top-down decision and the context within which they are situated.

Since Rogers (2003) provided five attributes of innovations that determine individuals' decisions in innovation adoption or rejection (*behaviors*); Bem (1970) looked at the interrelationship between *beliefs*, *attitudes* and *behaviors*; and Berlak and Berlak (1981) investigated how the structure of school (*context*) and teachers' *beliefs* impact their resolutions

(*behaviors*), I believe that these three authors' theories can be used as a framework to illuminate the interrelationship between Taiwanese ELL teachers' beliefs, attitudes, practices and the context within which they are situated.

Even though Bem (1970) emphasized human's capacity to seek resolutions for the inconsistency between their beliefs and behaviors, he simply made a statement that human will make a change in behaviors in order to attain consistency. Unlike Berlak and Berlak (1981), Bem did not create a "dilemma language" to explain "what kinds of resolutions" individuals will make when they face a dilemma in daily life. Besides that, and unlike Rogers (2003), Bem did not explain "what kind of procedures" individuals will go through before making a change in their behaviors (or even there is a possibility, as Rogers claimed, that they will eventually decide to maintain their original behaviors). Furthermore, Bem asserted that "groups regulate beliefs, attitudes, and behaviors through the use of social reward and punishment" (p. 79) and that is the reason why individuals will follow the change when a change occurs within a group. This notion is different from what Cuban suggested in his study in terms of technology implementation in school settings. I believe that it is because Bem aims at generalizing the relationships between human beliefs, attitudes and behaviors, and the generalization inhibits him from looking at individual differences or exceptional cases which can occur in different social/organizational context. However, Bem's theory still provides a framework to fill the gap in three ways: First of all, it pinpoints the importance of looking at the relationships between human beliefs, attitudes and behaviors. As Bem claimed, human beliefs, attitudes and behaviors are interrelated; therefore, to better understand teachers' infrequent use of computer technology for instructional purposes (behavior), researchers should investigate teachers' beliefs and attitudes toward technology. Second, similar to Rogers and Berlak and Berlak, Bem suggested that interpersonal

social networks play a crucial role in transmitting information and determining ones' decisions of adopting or rejecting a new idea. In particular, the opinion leaders function as the role models who have the strongest power to influence peers' use or nonuse of a particular innovation. Therefore, in terms of technology implementation, Bem's assertion can help us explain what role interpersonal network plays in teachers' decision-making process. Third, Bem mentioned that social norms regulate individuals' beliefs, attitudes and behaviors; therefore, this idea can inform us to investigate the norms within the teaching community and it also provides a framework in explaining how the norms interrelate to teachers' beliefs and practices.

Rogers' (2003) notions can also be used as a framework to shed light on the relationships between computer technology implementation (innovation), teachers' actual use (adopters' behaviors) and the context in the following ways. First of all, the five attributes of innovations (relative advantage, compatibility, complexity, trialability and observability) that Rogers provided can be used as a framework to explain the underlying reasons why teachers decide to adopt or reject the use of computer technology in instructions. Take Cuban's (1986) arguments as an example, Cuban mentioned that "teacher use, then, would tend to be selective and minimal since the innovation responds less to their concerns than other available instructional tools" (p. 59). Therefore, if the relative advantage of computer technology is not clear to teachers or if it does not fit their needs, it could be the reason for teachers to have a hesitant or resistant attitude toward incorporating computer technology in instructions. In addition, Cuban claimed that in the teaching community, the development of interpersonal relationship between teachers and students are highly valued; however, many teachers tend to believe that computers will diminish the opportunity of interpersonal contact. Therefore, if the use of computer technology in classroom is not compatible with teachers' beliefs of teaching and learning, the rate of adoption

will be certainly low. Second, Rogers pointed out that “when the social system is oriented to change, the opinion leaders are more innovative . . . opinion leaders serve as a model for the innovation behavior of their followers” (p. 27). Therefore, the adopter categories (innovators, early adopters, early majority, late majority and laggards) that Rogers generated can also be used in helping researchers to identify who the opinion leaders in schools are and how their opinions affect other colleagues’ adoption or rejection of the use of computer technology in instructions. In addition, the characteristics of the five types of adopters can also be used as a framework to illuminate the reasons why certain teachers have a more positive attitude toward technology implementation while others have a more negative attitude. Finally, Rogers noted that the failure of the diffusion of innovation is not an individual-level problem. The context and the system at large are the factors we have to take into account in the diffusion process. Therefore, this notion directs us to pay particular attention to “context” when talking about the implementation of innovation.

Berlak and Berlak (1981) suggested that teachers’ beliefs are shaped by their experiences in the social context they are situated in and their beliefs impact their practices and the actions they take in response to the dilemma they face in daily practice. Therefore, the theory Berlak and Berlak proposed can also illuminate the interrelationships between teachers’ experiences, practices, beliefs and the sociocultural contexts within which they are situated. Most importantly, Berlak and Berlak noted that their study aims at creating a “dilemma language” to “formulate and investigate the relationships between consciousness, behavior and the social context past, present and future that are ‘in’ individuals in the moments that they act” (p. 223). Therefore, “dilemma language” can be used as a framework to help researchers to conceptualize the educational philosophy individual teachers possess (e.g. learning is individual or learning is

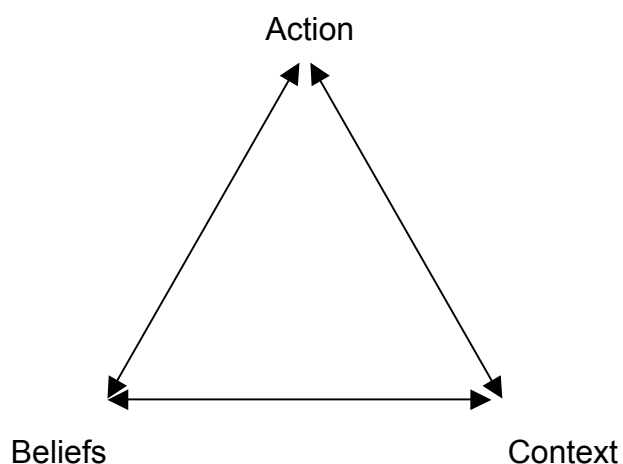
social). It can also inform researchers of teachers' real concerns and the resolutions they make when they are situated in the classroom facing the daily complexity of school realities. For instance, if teachers hold the belief that they should have more control over students' behaviors and that knowledge is given rather than is gained through collaborative learning, they might fail to perceive the relative advantage of computer technology in facilitating teaching and promoting students' intellectual development. In other words, the "dilemma language" helps researchers better understand why certain teachers retain their original teaching strategies instead of adopting computer technology for classroom use while others are more active adopters. In short, "dilemma language" can be used as a framework to investigate the complexity of daily practice as well as in explaining the relationships between teachers' beliefs, practices and the context within which they are situated.

In conclusion, in order to bridge the gap that Cuban (1986) pointed out, it is essential for researchers to further investigate teachers' beliefs, attitudes and practices in terms of technology use as well as the school context within which they are situated. The theories Bem (1970), Rogers (2003), Berlak and Berlak (1981) proposed can be used as a framework to inform different aspects of the problem issues that Cuban mentioned; to shed light on the data researchers collect in future studies, and ultimately to help researchers bridge the gap between policymakers/administrators' beliefs and expectations and teachers' beliefs and actual practices.

After reviewing the existing literature in terms of technology implementation and the tentative results from my pilot study, I believe that there is a need to further explore what ELL teachers' central concerns regarding technology implementation and how ELL teachers respond to the top-down decision. More specifically, this study intends to employ the qualitative methodology to further investigate Taiwanese college ELL instructors' central concerns

regarding technology implementation in their school contexts and actions they continually employ in dealing with these concerns.

A-B-C Model (Action, Belief, Context)



The ABC model serves as a theoretical framework for grounded this inquiry. A theory is an integrated and interrelated set of hypotheses that have explanatory and predictive power. A theoretical framework is an expression of the systemic manner in which theoretical assumptions interrelate and collectively function. This framework brings together Berlack and Berlack's (1981) notions of belief in social context, Bem's (1970) notions of beliefs, attitudes and behaviors being regulated in social contexts, and Roger's (2003) notions of social impact and homophilia. The model asserts that actions, beliefs, and context are inextricably interconnected. It is further informed by the work of Cuban (1986, 2001, 2004) who specifically looked at the social dimensions of technology implementation in schools and the work of Zeichner (1994) who looked at the meaning making of teachers. It also looks at the work of Becker (2001) who considered that technology must incorporate all the components of this model. This model also

came about from my pilot study that found that all of the three elements of this model were operating in an inextricable fashion. In this way, the theoretical framework that underpins this study is grounded both in the empirical and conceptual work of other researchers (e.g., Berlack and Berlack; Becker; Bem; Cuban; Zeichner) and my own data, and analysis from the pilot study.

Research Questions

- 1) What are ELL teachers' perceptions of technology implementation for instructional purposes and
- 2) What are their central concerns regarding this?
- 3) What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?

CHAPTER 3: METHODOLOGY

Introduction

This chapter outlines the methodology that was used in this study. A methodology is philosophy of method; an integrated set of tools and principles for their appropriate use in inquiry. A methodology drives both data collection and data analysis processes in research and offers lenses through which the notion of research is understood. A methodology makes certain ontological and epistemological commitments and assumptions and offers ways in which these are to be understood and bounded. This chapter outlines the methodological traditions of case study and grounded theory. This study draws on both traditions and following the respective sections on these two traditions there follows a section on their appropriate integration for the purpose of this study. The notion of methodological appropriateness is explored in a section on the specific context of this study. Following this there is a discussion of the specific methods of data collection and analysis that were used for this study. Finally, there is a discussion of the expected outcomes of this study in light of the literature and my pilot study.

Case study

Case study research involves the study of an issue explored through one or more cases within a bounded system. Case study research is a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a case description and case-based themes (Creswell, 2007).

Merriam (1998) defined case study in terms of its *end product* “a qualitative case study is an intensive, holistic description and analysis of a single instance, phenomenon, or social unit” (p.

21). Yin (2003) defined case study in terms of the research process stating, “a case study is 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” (p. 13). Smith (1978) referred to this as research on a “bounded system.” Stake (1994, 1995) explained that this approach involves the researcher pinpointing the *unit of study* and framing this unit as the case which itself is an integrated system.

According to Yin (2003), case study provides researchers a holistic and meaningful view of the real-life event. The key to determine which type of research strategy the investigator will take for inquiry is to understand the substance and the form of the research question. Case study aims at examining contemporary events that can be investigated through a variety of evidence, such as documents, artifacts, direct observations and interviews. Case study can incorporate both quantitative and qualitative evidence and is not limited to direct and detailed observations. In case study, as Yin stated, defining the boundary of the case (Yin referred to this as the “unit of analysis”) is an important step in the research design process because it directly determines the approach of data collection and data analysis. According to Yin, the definition of the unit of analysis is related to the researcher’s initial research question. However, Yin also claimed that researchers can always redefine the unit of analysis during the data collection process when new discoveries emerge. Yin also asserted that a case study should consist of five major components of research design: “a) a study’s questions, b) its propositions, c) its units of analysis, d) the logic linking the data to the propositions and e) the criteria for interpreting the findings” (p. 28).

Merriam (1998) suggested that a case study design is employed to gain an in-depth understanding of the situation and seeks to illuminate how participants make meaning in the context of the case. The interest is on process rather than on outcomes. How things function in

context is of concern rather than a specific variable. The focus is on discovery rather than on confirmation. Case studies are differentiated from other types of qualitative research in that they are intensive descriptions and are analyses of a single unit or bounded system.

As Stake (1995) pointed out, the notion of “boundary” is an important issue in case study. This means that in determining whether a research project is a case study or not it is important to see whether it has a clear boundary. For instance, if a researcher intends to look at the “relationship” among schools, a “reason” for innovative teaching, or the “policies” of school reform, these cannot be viewed as lending themselves clearly to the case study approach. For Stake (1995), “the case is a specific, a complex, functioning thing” (p. 2). The topic should relate to specifics rather than generalities.

Unlike experimental, survey, or historical research, case study research does not claim any particular methods for data collection or data analysis. Researchers are interested in insight, discovery, and interpretation rather than hypothesis testing. The case study focuses on holistic description and explanation. As Yin (2003) observed, case study is a design particularly suited for the investigation of “a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident” (p. 13).

Grounded Theory

Grounded theory is a methodology developed by Glaser and Strauss in the mid 1960s while the two worked together on an extended qualitative research project on palliative care in hospitals (Glaser & Strauss, 1965, 1968, 1971). Their landmark book on the methodology they employed in this study greatly influenced not only the field of sociology but the research community at large (Glaser & Strauss, 1967). The grounded theory methodology involves building theory from data by way of a specific set of methods. Glaser and Strauss (1967) insisted

that pre-existing frameworks NOT be brought into research. Rather, theory is discovered in data. Grounded theory was further developed by Strauss and Corbin (1990) and by Glaser (1978, 1992, 1998, 2007).

While grounded theory makes use of methods that are effective in generating theory from data, its perspective on data and inquiry more generally has led some thinkers to refer to it as objectivist (Charmaz, 2000). More recently, Charmaz, a student of both Glaser and Strauss developed a methodology she referred to as Constructivist Grounded Theory (Charmaz, 2000, 2006). Although rejected by Glaser (2002) as an oxymoron, this has been offered as a middle way between the effective but objectivist approach of grounded theory and more postmodern approaches that call into question the notion of an objective reality. Charmaz (2000) offered:

Constructivist grounded theory celebrates firsthand knowledge of empirical worlds, takes a middle ground between postmodernism and positivism, and offers accessible methods for taking qualitative research into the 21st century. Constructivism assumes the relativism of multiple social realities, recognizes the mutual creation of knowledge by the viewer and the viewed, and aims toward interpretive understanding of subjects' meanings. (Guba & Lincoln, 1994): Schwandt, 1994). The power of grounded theory lies in its tools for understanding empirical worlds. We can reclaim their positivist underpinnings to form a revised; more open-ended practice of grounded theory that stresses is emergent, constructivist elements. We can use grounded theory methods as flexible, heuristic strategies rather than as formulaic procedures (p. 510).

In this study, the grounded theory methods as elaborated by Glaser (1978, 1992, 1998, 2007) open-coding, memoing, constant comparison, theoretical coding, theoretical sampling, were be employed to make sense of Taiwanese language teachers central concerns with respect

to the implementation of computer assisted language learning. The actions, beliefs, context (ABC Model) framework will be used as a theoretical framework with which to ground this inquiry. Individual teachers will be considered “cases” to frame the inquiry. In this way, this study uses the ABC theoretical framework to guide the inquiry while methods from the case study and grounded theory research traditions will guide the analysis.

The Integration of Grounded Theory and Case Study approaches in this study

This study focuses on how Taiwanese teachers respond to top-down decisions with respect to technology implementation. This is a focus on *process*. It focuses on the unique *perspectives* of teachers with respect to technology implementation. It focuses on the teachers’ perspectives within a specific given *context*. Because of the focus on process, perspective and context, a blending of grounded theory and case study research methodologies will be employed in this study. It is necessary to build a robust, in-depth understanding of the context, the participants’ perspectives and their actions/responses. Therefore, a rich-thick description of the context is needed (Geertz, 1973; Merriam, 1998).

Case study offers the researcher an in-depth analysis of a bounded system. Three variations exist in terms of intent: the single instrumental case study, the collective or multiple case study, and the intrinsic case study (Creswell, 2007). In pursuit of gaining a rich-thick description of the life worlds of language teachers in Taiwan and how the implementation of technology impacts this, a collective or multiple case study and accompanying cross case analysis will be conducted. This will allow for the careful construction of stories that cut across individual cases and therefore provide an even richer description by providing themes that are common to multiple cases which themselves took a deep look at the context. Cross-case displays that compare and contrast the single cases so that “coherent descriptions of what and how things

happen, across a number of cases” may be created (Miles & Huberman, 1994, p. 207). In this study the individual cases are ELL teachers in Taiwan. From these deep examinations, I hope to inductively build theoretical assertions from the thick descriptions of single cases and then from the cross case analysis. A methodology that provides the tools for building theory from description is grounded theory.

From the perspective of the grounded theory research paradigm, a theory is an interrelated set of hypotheses that has explanatory and predictive power. Theory must arise from data rather than be laid onto data *a priori* and this must be done inductively. The assertion here is that a pre-existing category of what should be looked at will inhibit researchers from discovering teachers’ real concerns and needs as well as their actions. Therefore, the existing literature (e.g., Cuban, 1986) and the results from my pilot study will only serve as guidance to pinpoint the problem issue. It will not serve as a theoretical framework that might prejudice my data collection and data analysis. Instead, I will remain open to developing conceptual categories and themes that are grounded in the data rather than predetermining them. This means that I intend to adopt the research methods from grounded theory, such as open coding, theoretical coding, memoing, and constant comparison (Glaser & Strauss, 1967; Glaser, 1978) as well as the tools from the case study approach which may also serve in theory development. As Merriam (1998) mentioned, “a case study might also build a substantive theory” (p. 20). In summary, the nature of this study is a case study that aims at developing a substantive theory from the data. It will be conducted through a cross case analysis and themes will emerge through constant comparison. Theory, then, will be developed toward the end.

The Present Study

I conducted a multiple case study that involves four individual case studies. Each

individual participant is a Taiwanese ELL teacher, and each participant is considered as one case. An in-depth description of each case was provided. Then a cross-case analysis was presented to inform the common concerns Taiwanese ELL instructors have and the responses they take with respect to top-down technology implementation decisions.

For the data collection, case study involves multiple sources of information. Therefore, in this study, I included a) interviews of the teachers; b) direct observation of how those teachers instruct their classes; c) participant observation on how those teachers reflect on their instructional techniques; d) document analysis on artifacts produced by the teachers, students, and the institutions that provide the context for the teachers' work.

For the analysis of the data, I first had an in-depth description of each individual case (a holistic analysis), and then focused on the emerging themes (analysis of themes) to have a better understanding of the complexity of the case. This was done within one case (within-case analysis), and then a thematic analysis across the cases was done (cross-case analysis) (Miles & Huberman, 1994). In looking for the emerging themes within and across the cases, the memoing approach and coding approach used in grounded theory was adopted (Glaser & Strauss, 1967; Glaser, 1978). Finally, the implications drawn from the cases were interpreted. In other words, I adopted Lincoln and Guba's (1985) case study structure when interpreting the findings: the problem, the context, the issues, and the "lessons learned" (Creswell, 2007, p. 93).

CHAPTER 4: RESULTS

Introduction

This chapter will discuss the data and the analysis of the four cases for this study. The findings are basically discussed and illustrated based on the A-B-C model. In other words, the findings of each individual case will be presented. Each case will start with an introduction to the case, followed by an in-depth description of the context, the participant's belief of technology implementation, and then the actions he/she takes in response to the top-down decision of technology implementation. Each case will be discussed alone in order to give readers an in-depth understanding of each case. The sequence of the cases to be presented will be Kate, Chen, Charlene, and then Jane.

Data

The data for this study came from two main sources. The first source was a set of classroom observations and informal conversations with the participants who served as the four cases for this study. These participants were Kate, Chen, Charlene, and Jane. Field notes collected from the classroom observations served as a supplementary data in order to help me better understand the participants' practice, the classroom dynamic, the interaction among teacher and students, and how technology is actually used in the participants' practice. I visited every course that the participants taught during the semester. Classroom observations were conducted beginning on the third week of the semester. The mid-term week and the following week were not visited because regular instruction was not initiated during that time period. Kate was visited three times and the classes being observed covered the topics of Introduction to Western Literature, English Grammar and Composition, Listening and Speaking, and English for Secretaries. Chen's English Literature and Listening Comprehension classes were visited three

times. Charlene was visited three times for her Vocabulary, Tourism English, Oral Communication, and Multimedia Learning classes. Jane was visited three times for her Introduction to Translation, Introduction to Teaching English to Speakers of Other Languages (TESOL), English Grammar and Composition, and General English Proficiency Test (GEPT) preparation classes. In addition to the classroom observations, during our informal conversations, participants revealed a lot of their complaints, struggles, and dilemmas when they are situated in an evaluative context. Therefore, field notes collected from the informal conversations also served as a major data source for this study. The informal conversations with the participants occurred in the office, in the hallway, or on our way to the coffee shop when the voice-recording device was turned off.

The second source of the data was a set of in-depth interviews with the participants. Jane and Chen were interviewed twice and Kate and Charlene were interviewed three times with each interview session ranging approximately from 1 to 1.5 hours. These interviews were audio recorded using a digital audio voice recorder and were then transcribed in Chinese in their entirety. They were analyzed so as to extract themes related to three broad categories that respond to the three research questions. Specifically these were individual chunks or paragraphs extracted from each of the interviews that related to the elements in the *Context, Belief, and Action Model* discussed in Chapter Two. For each participant, an analysis was conducted regarding their (1) beliefs, (2) actions and (3) contexts as they relate to (1) (a) ELL teachers' perceptions of technology implementation [RQ1] and (b) ELL teachers' central concerns regarding technology implementation [RQ2], (2) the actions ELL teachers take in response to the top-down decision of technology implementation [RQ3], and (3) the respective evaluative context in which ELL teachers are situated. The result of this process was the creation of four

individual documents that contained numerical lists of individual chunks of textual data categorized according to the aforementioned themes. These themes were then translated into English that were then coupled with direct quotes in the Chinese text.

For example, the document created for Kate's case contained 22 chunks of text associated with the first category "ELL teachers' perceptions of technology implementation." The first three chunks (1, 2, and 3) are quoted here so as to illustrate how this document looked in its entirety:

1. Kate doesn't perceive a technology-rich learning environment as essential in ELL teaching and learning. (It doesn't mean that she is against the use of technology for instructional purpose, but she just doesn't perceive it as a "must-have".)

“因為其實英語系喔,我們不是像一些其他系,我們不會需要很多專業設備,我們頂多就是學生的視聽器材”(Kate_1_29:31).²

“對我來說,我覺得那些所謂的科技器材,我覺得它不是必要的”(Kate_1_30:44).

“就是你不一定要透過它才有辦法進行課程,才有辦法在學生學習上面更..,就是才能教他”(Kate_1_31:29).

2. Kate doesn't perceive technology implementation as the first priority. There are always other alternatives. Technology is replaceable.

“有些老師就是可能會覺得,反正她其實也不一定要用,比 會話課好了,你當然可以戴上耳機,叫學生給你戴上耳機然後你放給她聽,這樣可以練一對一的對話,可是其實你不要用也可以阿,你可以課堂上直接跟她對話就好了阿”(Kate_1_29:31).

3. Kate perceives technology implementation as having limited advantages in ELL teaching and learning.

“Q:所以意思是說那種東西輔助上也不是說有多大的幫助? A:我覺得其實沒有耶”(Kate_1_30:44).

The document created for Charlene's, Jane's, and Chen's case contained 21,

² The numbers here refer to the number of the interview and the time stamp in the audio recording. Kate was interviewed three times. As indicated, the themes were translated into English while the individual quotes were not.

13, and 18 chunks, respectively, of text associated with the first category “ELL teachers’ perceptions of technology implementation.”

Other data that does not fit within the three broad categories of beliefs, actions, and contexts was sorted into the fourth category. Under the fourth category, data was sorted into sub-categories as they are in relation to the introduction to each individual case.

For the write-up for each case, an introduction to the case was provided, following with an in-depth description of the context, each participant’s beliefs (RQ1, RQ2), and each participant’s actions (RQ3). The introduction to the case contain information of (a) each individual participant’s background, (b) his/her educational philosophy, (c) the central concerns in his/her daily practice, and (d) the actions the participant takes in response to the challenges of daily practice. Following the introduction to the case, an in-depth description of the context was provided, which contained (a) an introduction of the current situation of each school, (b) the evaluative context each participant is situated in, (c) each individual participant’s central concerns of the MOE evaluation, and (d) the actions each school takes in response to the Ministry of Education (MOE) evaluation.

Data Analysis

In the following section, data and analysis of each case were discussed and illustrated based on the A-B-C model. Findings of each case were presented in the sequence of Kate, Chen, Charlene, and Jane.

Case #1: Kate

Introduction to the Case

Kate received her B.A. in the field of English Language and Literature in Taiwan. After

graduating from college, she pursued her M.A. and Ph.D. degree in the field of TESOL in two universities in the U.S.A. During her stay in the States, she had been teaching Mandarin to young Chinese immigrant children for five years. After earning her Ph.D., she returned back to Taiwan and became an assistant professor in an Institute of Technology in the suburban area in southern Taiwan. One year later, Kate now serves as the department chair in the Department of Applied English and helps the department to prepare for the second MOE evaluation. At this point in time, Kate has been teaching at this particular college for four years.

Kate is currently a single career woman who spends her leisure time doing volunteer work in a non-profit organization that serves the community and people in need globally. She also serves as the president of a club for English speech and communication in the local community. In addition, she attends academic conferences and professional training workshops regularly in her leisure time.

Kate believes that learning should be self-motivated, and that intrinsic motivation has nothing to do with instructional strategy. It is more about individuals' self-efficacy. Kate believes that intrinsic motivation comes from learners' personal desire of learning, and extrinsic stimulus (such as teachers' instructional strategy) does not help as much. Therefore, Kate doesn't think technology implementation can do much about this issue. She thinks providing counseling services is a better solution. However, Kate still tries her best to incorporate different teaching resources in order to change the classroom dynamic. Interacting with a group of students who lack learning motivation and have poor language proficiency level, Kate places student needs, engagement, and learning motivation first when addressing her educational philosophy of ELL teaching and learning. While students' low learning motivation and poor language proficiency level are the biggest challenges Kate encounters in her teaching, Kate endeavors to create lessons

whose goal is to bring learning in line with students' real needs. Besides, Kate perceives a traditional class that relies merely on textbooks as too systematic, inflexible, and enthusiasm killing. Therefore, to successfully promote students' learning motivation and to change the classroom dynamic, Kate tries to integrate online resources as supplementary materials in order to bring variety to the class.

Being impacted by Confucianism's theoretical assumption of the role of teachers and their responsibilities in the school context, Kate believes that the ultimate purpose of schooling and teachers' responsibility is to transmit knowledge to students and to resolve students' puzzles. Having this perception in mind, Kate, on one hand, believes that qualified ELL teachers should be familiar with the most up-to-date issues happening in the world and the current trend of ELL teaching and learning because these topics are great resources to be incorporated for the course content. This assertion reveals Kate's perception of the professional image of ELL teachers. Kate believes that ELL teachers should persistently have personal growth and professional development in order to be innovative. However, on the other hand, having the idea that teachers should transmit knowledge and information to students inevitably allows Kate to position herself as an authoritative figure in the classroom. From the on-site observation, it is often found that Kate's instructional strategy is teacher-centered and lecture-oriented. The interaction between Kate and her students occurs in a non-reciprocal way. Kate delivers speech, students sit and listen, Kate asks comprehension questions, and students respond to Kate's questions to earn extra credits for their final score. It is rarely found that students spontaneously reflected on their thoughts and concerns and are not actively involved in the learning process. Even though when addressing her teaching philosophy, Kate points out that she places students' needs, engagement, and learning motivation in the first place, her actual practice demonstrates a different story.

Even though Kate endeavors to promote students' interests in learning in her entire teaching career, Kate also mentions that there are three reasons that make promoting students' learning motivation challenging. First, to create an engaging learning environment, Kate believes that teachers will have to use students' native language for instruction because the student population she interacts with has limited English proficiency. However, by doing so, it also limits the opportunity to expose students in an authentic learning environment where the target language is naturally and widely used. The less target language students' use or are exposed to, the less chance for students to improve their language proficiency will there be. Therefore, students' language barrier makes it even harder for teachers to design activities that can engage students.

Second, there is a value conflict regarding schooling and success between educators and students. According to Kate, students don't value the importance of learning; instead, they want "enjoyment" of ease and material comfort. Therefore, students would rather spend time and efforts on part-time jobs instead of academic-related activities. Given to the situation that schooling is less attractive to students, Kate believes that there is a small possibility to successfully promote students' interests in learning no matter how many resources schools and teachers provide. In that case, even though Kate agrees that computer technology can make learning interesting to a certain degree, it still cannot fundamentally turn over students' belief system regarding the importance of schooling.

Third, according to Kate, another reason that causes students' low learning motivation is because of the bad reputation the school has. The bad reputation comes from several scandals the school has and from the failure of passing the MOE evaluation. Due to the bad reputation, students and teachers are somehow labeled by the general public and therefore, are in lack of

esprit de corps and a sense of belongingness to the school. Situated in a context in which the school has bad reputation, students gradually lose their trust of the school and their interests in learning. All of this result in a situation that students with higher learning motivation and academic ability will endeavor to transfer to a better school and those who remain in this school often have a serious issue of learning motivation. The overall situation makes it even more challenging for teachers to deal with the issue of students' low learning motivation.

Kate's educational philosophy (teachers' responsibility is to transmit knowledge and to resolve students' puzzles) explains how she uses technology in her instruction. For instance, Kate perceives technology implementation as a way to "present" ideas (e.g., PowerPoint) and to "communicate" with students (e.g., submitting assignment or asking questions through email) outside the classroom. Her instructional strategy clearly reveals her pedagogical objectives that focus on transmitting textual facts to students.

Besides, Kate justifies her limited use of technology for instructional purpose by pointing out that her use or nonuse of technology for instructional purpose depends on the course objective and the nature of the content area. Kate also emphasizes that it is the content of the lesson and teachers' instructional strategy that determine the success of the class. The tool might be a facilitator but should not be a major focus. If the policymakers and administrators overemphasize technology implementation, it emphasizes the superficial and neglects the fundamental.

In conclusion, Kate's educational philosophy is a lens that leads her to view technology implementation as having limited benefits to ELL teaching and learning. Therefore, Kate's perception of technology implementation leads her to her limited use of technology in her instruction. She uses technology mostly for presenting ideas and for the preparation of teaching

and learning materials. She considers technology might benefit more to students' self-directed learning rather than in-class instruction.

Context

The general public has a negative impression of the school Kate works for. The bad reputation comes from several scandals and negative reports regarding the poor education quality the school offers. In this particular school context, they have a serious problem of recruiting sufficient students due to their bad reputation. This leads to another issue of the lack of funding that causes the school's failure to ensure a better teaching and learning environment for teachers and students. For instance, there are insufficient high-tech facilities offered to teachers and students. The current equipment is poorly maintained and the hardware and software are outdated. There are no personnel in charge of the technical support. Few professional trainings regarding technology implementation are provided to teachers.

In addition, the issue of lack of funding also causes the school to lay more administrative duties (such as the responsibility of recruiting students) onto teachers. Along with the heavy workload coming from teaching, academic research, and student service, administrative duties that are irrelevant to teachers' specialty become an extra burden to teachers. The issue of lack of funding also gives the school an excuse not to reward teachers even if they have great achievements in teaching and student service. In other words, in order to avoid providing teachers a bonus for their great achievement, the school gives every teacher the same negative results on the teacher evaluation regardless of the effort they put in their daily practice and community service. Gradually, teachers are disempowered and become less motivated. This explains why many of the teachers job hop within two to three years in this school. Teachers' low motivation will of course, impact students' learning motivation and their trust in the school.

There is obviously a tension between the school, teachers, and students. Therefore, student transfer rate is high as well. When the school has difficulty recruiting sufficient students and maintaining current student population and faculty members, it is easy for them to fail to provide high quality education. Overall, the issues of the lack of funding, the poor education quality, the bad reputation, and the failure to recruit and maintain students and teachers cause an amplifying causal loop that reduces the school's capacity to meet the standard of the MOE evaluation. In other words, the amplifying causal loop situates the school in a difficult position to survive in the context of evaluative pressure.

From Kate's description, the MOE evaluation unintentionally creates a misaligned, evaluative context in which teachers are inevitably situated in a disempowered position. Kate points out that there is an evaluative misalignment occurring in this particular school context because the MOE evaluation criteria do not match the reality of the context. In other words, the students' interest, the teachers' interest, the school's interest, and the Ministry of Education's interest are misaligned. This also illustrates that there is a gap between the beliefs of the Ministry of Education, the school, the teachers, and the students. This misalignment can be identified from three aspects.

First, Kate questions the validity of MOE evaluation and perceives MOE evaluation as an unfair evaluative system in that it uses the same standard to evaluate schools with different situations (e.g., the school background, the organizational structure, their resources, the neighborhood they are situated in, the economic problems they encounter and the general barrier they encounter in running a school, etc.). Kate further parallels the inequality of this evaluative system with the standardized test and argues that standardized test score is used as an indicator to evaluate students' academic ability and achievement regardless of their individual differences

(such as intellectual capacity, talents and specialty, cultural background, aptitude, etc.). As Kate states:

“我覺得評鑑制度本身有問題,有不公平的地方,對,因為它就是,因為像以前,我覺得這有點像大學聯考好了,全部的孩子就用這一套來考試,然後之後分發去唸書,這樣子,那我覺得其實現在就變成說這個評鑑標準有點像是大學聯考,所有的學校,國立私立,所有的學校,只要是在她們評鑑標準,這個評鑑需要接受評鑑的學校就是要去參加這個評鑑考試,我覺得其實就有點那個意思,你用這樣的一個標準去評量這種其實是有差異性的學校,我覺得真的是蠻不公平的啦” (Kate_2_01:05:02).

“I question the validity of the MOE evaluation system. It is not fair enough. It’s just like the college entrance exam that we used to have before. It’s not fair because each individual young kid is evaluated by the same standard through standardized test. They are assigned to schools by the score they get from the exam. Now, I got a feeling that the MOE evaluation system is fundamentally similar with the entrance exam system. Every college, including public school and private school, is forced to attend this “exam.” And I think it is really unfair that schools are evaluated by the same standard regardless of individual differences” (Kate_2_01:05:02).

Kate’s argument clearly demonstrates how disempowered teachers are when they are unfairly evaluated by a misaligned evaluation system.

According to Kate, when the structure of the course focuses on the goal of passing standardized tests, it is actually meant to teach students the temporary acquisition of facts and skills rather than in-depth understanding and developing critical thinking ability. It will be then called into question about whether encouraging students to get language proficiency certificates can truly foster their learning or it is fundamentally driving out their opportunity of higher-order learning. In other words, this particular evaluation criterion is killing the education quality and is planting the seeds for its own destruction rather than assuring a high quality of education to students. Therefore, it is also another example that demonstrates the misalignment of the MOE evaluation. Besides, when using standardized criteria as a framework to evaluate schools with different situations, it not only causes an issue of inequality but also places the underfunded, under-resourced schools in a critical position in passing the evaluation. As Kate points out:

“因為我覺得有些學校,尤其是有些新學校它才剛起步,有些私立學校它能夠提供的,它的資源不像國立大學有這麼多的經費,然後加上國立大學的學生的那種的總成績也高,那我覺得它其實有它的困擾處,那你不能要求,你不能把我們放在那要的學校,用同一套標準來做審核,來評定,來做評量,我覺得對有些學校來說非常的不公平” (Kate_2_01:02:00).

“I think some schools, especially some newly established schools, will encounter tremendous difficulties passing the MOE evaluation. For instance, some private colleges do not have as much of funds as the public colleges do. Therefore, they cannot offer sufficient resources to students. Besides, their students are less capable than the students in the public colleges. Overall, we cannot put all the schools on the same scale and use the same standard to evaluate and to judge them. This is really unfair” (Kate_2_01:02:00).

By looking at Kate’s perceptions of and experiences with the MOE evaluation, the shortcoming of this misaligned evaluation and how it positions teachers in a disempowered situation have become more apparent. Kate’s statement shows that the underfunded, under-resourced schools are put on the same scale to be evaluated as other prestigious schools are. This misalignment cannot assist the disadvantaged schools to provide a high quality of education to students, on the contrary, it will only sabotage faculty morale and amplify the inequality coming from the idea of “survival of the fittest.”

Given the fact that Kate has negative perceptions and experiences with the MOE evaluation, Kate not only questions the validity of the MOE evaluation, but also considers it as a punishment. Kate says:

“我覺得這個評鑑制度的審理就有問題存在,那你用這個有問題的東西去評量,你覺得出來的東西公正嗎?” (Kate_2_01:02:00)

“I think the MOE evaluation system is questionable. Then, if you use a system that has problem in itself to evaluate schools, do you really believe that the result of the MOE evaluation is fair?” (Kate_2_01:02:00).

Kate identifies the poor fit between the evaluation criteria and the reality (e.g. teachers’ real concerns in their daily practice) as the major reason that drags down teachers’ enthusiasm to

teach and their distrust of the evaluation system. It is a poor fit because the evaluation criteria are not individualized and thus cannot represent the reality of the classroom teaching and learning in this particular school context. It is unfair, as Kate stated, because the ultimate purpose of the evaluation is actually trying to pull down the school and the department in a legitimate way. It is a punishment because teachers are disempowered by the misaligned system and are overwhelmed by the heavy workload. Even though the MOE evaluation and teacher evaluation intend to be used as an incentive structure to improve the education quality, they eventually turn out to be an enthusiasm killing system.

Secondly, the evaluation criteria do not fit well with what matters to the practice community. For instance, among the evaluation criteria, the Ministry of Education highly values the number of professors (including assistant professors, associate professors, and professors) the department under evaluated hires and the amount of publications teachers have. The way for teachers to be promoted is through demonstrating a strong record of published research. Therefore, in order to pass the MOE evaluation, the school develops an annual teacher evaluation system to appraise teachers' achievement in their teaching, administrative service, and academic research. The purpose of having such an annual teacher evaluation system is to ensure that teachers will be able to demonstrate a solid record of their competence on teaching and academic research during MOE evaluation committee visits. To measure teachers' competence, the amount of research publication is used as a major indicator over the other two to evaluate the education quality teachers being able to provide to students. However, Kate believes that research is more for the purpose of personal achievement in teachers' teaching career (e.g., earning tenure or having a promotion) than fundamentally assisting students in learning. She believes that conducting research is not equal to efficient and effective teaching. As Kate argues:

“一個老師很會研究,這跟,一個老師研究產量很多這跟學生的學習效果有正面的關係嗎?我就不是這麼認為阿,當然老師去研究的話或許是對她一些專業知識上的成長,對,可是問題是對她教學成效不見得有很直接的關係,可是教育部似乎認為有關係,否則他就不會去強調這一塊,對不對...當然我研究的東西我可以拿來跟學生分享,可是我的產量越多不代表我的教學成效越好阿,我覺得這個老師的研究產量跟學生的教學不見得有直接的關係”(Kate_2_01:10:20).

“Do you really think a teacher’s ability on conducting research is equal to his/her ability on promoting students’ learning achievement? I don’t think so. Maybe conducting academic research might promote teachers’ professional capacity. But the problem is that it is not necessary relevant to the effectiveness of his/her teaching. But, the Ministry of Education seems to believe they can be validly compared. Otherwise, the Ministry of Education will not emphasize on this part in the evaluation, aren’t they? ...Of course I can share the findings of my research with my students. But, I don’t think the amount of my academic research paper equals to the effectiveness of my teaching. I don’t think teachers’ academic research can directly benefit to students’ learning achievement” (Kate_2_01:10:20).

Unfortunately, both the teacher evaluation system and the MOE evaluation system put more weights on teachers’ academic research records over their efforts on teaching and student supervision. This misalignment conflicts with Kate’s educational philosophy regarding the role of teachers and what constitutes good teaching. This gap of belief frustrates and disempowers Kate when she is under review.

Due to the heavy workload and the lack of time, teachers have to prioritize their duties of teaching, academic research, and service. Given to the situation that the student population Kate interacts with requires special attention and individual assistance from teachers, Kate prefers to put time and effort on teaching and student counseling (which is considered as one part of the service criterion) as she truly believes that these practices can benefit students the most. As Kate mentions:

“比如說在這三塊裡面,教學,服務跟研究這部分,研究那部份我就真的是,並不是說它不是我的priority,雖然學校,因為我們這方面比較弱,所以學校希望我們把它放成priority,可是問題是,我們現在學生其實還是需要比較多的關注,所以對我們系上大部分的老師而言,教學這一塊是我們的priority,教學跟服務學生這一塊其實是priority,然後這個研究這部分喔,我們會在教學之虞再來慢慢進行,通常發現教學之虞其實就已

經沒有時間了,呵,也不是說沒時間啦,當然我們也可以砸時間下去,問題是就變成是沒有自己的生活了...老師做研究也犧牲掉了他和學生相處的時間,我有時候沒時間去做研究也是因為我坐在辦公室裡面,學生就會過來找我講話,你說我哪有時間做研究,那我回家之後我哪有力氣,我現在在學校被學生搞了一整天,我回家之後我哪有力氣做研究”(Kate_2_01:00:25).

“Among the three criteria of the MOE evaluation, teaching, service and research, I don’t place academic research as my first priority. Our school has the least achievement in this part among the evaluation criteria so that the school wants us to place it as our first priority. But the problem is that our students really need our assistance currently, so, for most of the teachers in my department, teaching and service will be our first priority. As to academic research, we will do it if we have extra time. Usually, we don’t have time for that. Well, it’s not really that we don’t have time for it. We still can devote our time on it, but the problem is that we won’t have a life, then...If teachers conduct academic research, they will have to sacrifice the time to supervise students. I don’t have time for academic research is because when I was in my office, students will come for my supervision. Then, how can I have time for academic research? When I get back home, how can I have extra energy for academic research? I was so exhausted dealing with students’ problems, how can I have energy for research?” (Kate_2_01:00:25).

Kate’s assertion shows that a gap in the beliefs between the Ministry of Education and the practice community regarding what can guarantee a better education quality. More specifically, there is a gap between what is evaluated and what teachers consider should be evaluated. The gap in the beliefs can serve as an example of the misalignment of the evaluation because being situated in an evaluative context, teachers lose their autonomy to determine what should be evaluated (e.g., teaching, service and research) and how they should instruct their class (e.g., the requirement of technology implementation, and “teaching to the test”). In addition to the issue of the misalignment, Kate’s assertion also reveals that the MOE evaluation burdens teachers with heavy workload and causes teachers’ lack of time on things they perceive as important. Both the heavy workload and the lack of time are not ensuring a high quality of education, instead, they only direct faculty members to cut corners when situated in an evaluative context.

Third, Kate argues that the MOE evaluation is in fact, a punitive system that

disempowers the under-resourced, undermanned schools and departments in that the MOE evaluation overemphasizes on what the school hasn't achieved rather than on what the school has accomplished. This will therefore, turn the evaluation into a punishing system instead of a system that encourages improvement. For instance, the Ministry of Education uses the evaluation results as an indicator to allocate school funds and to determine the termination of departments that fail to pass the evaluation. In other words, the Ministry of Education uses this evaluation system as a checkpoint to reward or to punish schools. Kate is very frustrated about the fact that teachers' efforts on teaching were never recognized and acknowledged in the MOE evaluation system. Kate says:

“如果他今天只是來評量我們然後說你這邊需要做改進,拿這些東西來做改進,當然很好,問題是這份報告變成是淘汰我們的一個決定因素,那我覺得那就對我們很不公平,我們不是沒有在做,我們也都很顧著學生,可是只是說我們研究上面比較,就我們沒有研究表現阿,我們的學生程度比較差,那你覺得說我們這個系做得不好,那你不就否定了我們所做的一些努力” (Kate_2_01:02:00).

“If they just evaluate us and point out where we should work on, it would be really good. But the problem is that they are now using the committee members' report as a vehicle to close our department. This is really unfair. It's not that we are not working hard. We do care about our students and devote time on them. It's just that we have limited academic publication and our students' language proficiency is weak. But you can't use these issues to misjudge us as less competent and then deny all of the efforts we put on our students” (Kate_2_01:02:00).

Kate further explains why the MOE evaluation is a punitive system. She says:

“我覺得評鑑制度不是不好,可是問題是它評鑑之後它後續的行動,我覺得,因為評鑑變成它來決定這個學校好不好...你這個評鑑其實是要讓這個學校更好不是嗎?你要讓它知道它有什麼地方需要改進的,可是它變成他拿這個評鑑來當成淘汰學校淘汰這個系所的一個決定因素,我覺得我就不是很認同這個” (Kate_2_01:02:00).

“I think there is nothing wrong with the idea of having an evaluation system, but the problem comes from what comes after the evaluation. It turns out that the Ministry of Education uses the result of the evaluation to determine whether the school is good enough or not. Isn't the original purpose of having such an evaluation system is to assist schools to be better? So, you should just let us know where we should improve. But, the Ministry of Education now uses this evaluation as a vehicle to eliminate the departments

which fail to pass the evaluation. I really cannot agree with this” (Kate_2_01:02:00).

From Kate’s argument, we can find that cutting down the funding makes it even more difficult for disqualified schools and departments to survive in the process of evaluation and to provide a high quality of education to students. In other words, the lack of funds results in the issues stemming from the lack of equipment, the lack of human resources, and the lack of support for teachers and students. Then it leads to a strong possibility of a failure in the MOE evaluation. This amplifying casual loop implies that even though the original purpose of the MOE evaluation is a monitoring system to assure high quality of education, it is actually undermining the whole system of higher education in Taiwan. Even though the original purpose of the MOE evaluation is with good intention, the misalignment of the evaluation eventually leads to a completely different consequence.

The misalignment of the evaluation eventually leads to an unexpected consequence. It is found that a serious lack of *esprit de corps* occurs in this particular school context. For example, due to the negative consequence of the evaluation result, the school has been labeled with a rather poor reputation. This causes students’ distrust and adverse attitude against the school. Therefore, students are ashamed of being members of this school and they have a strong desire to leave this school. In other words, they have a lack of *esprit de corps* in this particular school context. As Kate points out:

“因為你負面消息一出去了,就像你說新聞事件好了,它已經造成,其實你之後變成沒有,你想大家還是不太,就已經失去了人家的信任感,然後你之後在去做的一些,其實都已經有點為時已晚了” (Kate_2_01:14:55).

“Once there is a negative news report about the school, you’ll lose others’ trust. It’ll be too late no matter how hard the school tries to make it up” (Kate_2_01:14:55).

Kate further explains how the negative label impacts the *esprit de corps* in this particular school and students’ trust in school. Kate says:

“班風.. 很潰散,然後上課沒什麼動力,然後出席率也不高啦,...然後後來我發現她們的想法傾向,反正我都要走,我走了我從另一個地方開始...現在很多就轉到那種差不多的學校,比如說就是,就是還沒有受到一些新聞事件影響的學校”(Kate_1_01:04:18).

“Students’ learning motivation is really low. They don’t have motivation in learning and the attendance rate is low. Later on, I figured out that they incline to have an attitude and think that “I am leaving soon and I can start all over again in another school anyway.” Many of our students choose to transfer to other schools. Those schools are not necessarily better than my school, but they do not have bad reputation resulting from scandals” (Kate_1_01:04:18).

Besides, the misaligned teacher evaluation system causes a serious lack of *esprit de corps* among faculty members in this particular context. During my visit to this school, I happened to have a chance to witness teachers’ frustration and anger toward the unfair policy the school enforces. All the teachers in this department gathered together in the department office to complain about the school. According to the teachers, the original purpose of the teacher evaluation is to motivate teachers to improve their instruction; however it eventually turns out to be an unfair punishment to teachers. They mentioned that in order to cutting down the budget on awarding teachers who have great achievement on teacher evaluation, the school gave every teacher a very low grade regarding the teacher evaluation. This not only affects teachers’ salary but will also have negative consequence on their professional record. The poor record will jeopardize teachers once they have a chance to job hop to another school in the future. Teachers complained about the school’s selfishness for not having a further consideration of teachers’ welfare and how the school’s unjust decision might bring negative impact on teachers. Toward the end, the complaints lead to an adverse attitude against the school and the evaluation system. Teachers considered themselves not being well-respected because their hard work is overlooked by the school. As some teachers mentioned, if doing a lot and doing nothing will eventually lead to the same consequences, what is the purpose for the devotion of their time and efforts on teaching and service. Teachers even felt their hard work eventually results in punishment.

Therefore, teachers consider this evaluation system unfair and illegitimate because it cannot justify the real efforts teachers contribute to teaching and students. The whole evaluation process is highly political and positions teachers in an unfair dilemma.

The misalignment of the evaluation also unintentionally places teachers in a disempowered position because teachers lose their autonomy regarding grading, instructional strategy, and curriculum development. For example, when the school has a problem of recruiting sufficient students, they pass the buck to teachers by having a hope that teachers can help them maintain the current student population and prevent students from transferring to other schools. Therefore, teachers are put in dilemmatic situation that they have to compromise their standard of grading for political reasons. It is because having a higher standard will lead to a negative consequence in that students want to transfer to other schools to avoid the pressure from studies. In fearing of losing the current students, the school suggests teachers to lower their standard and have to please the students even if students have attitude problems. Kate complains that:

“A:加上我們又有學生壓力,就是我們希望能夠留住這些學生...其實比如說像我很想把這個學生fail掉的時候,因為我覺得他表現真的不好,我真的很想把他fail掉,或者是我在那個把關上面,可能又不能把那個標準定太高

Q:意思是lower your standard?

A:對, lower my criteria, my standard,對,然後說討好學生這一塊變成說,你又不能太,嘖,跟她們太大小聲”(Kate_1_01:02:29).

“A: We have pressure from the school requesting us to keep the students. But, if I'd like to fail a student because of his/her poor performance, the school will ask me to reconsider my standard. It turns out that I cannot position myself as a gatekeeper nor to have a higher standard. I will have to purposively adjust my standard to avoid failing students.

Q: Do you mean you have to lower your standard?

A: Yeah, lower my criteria and my standard. It sounds like teachers have to please students. As a teacher, I cannot truly express my opinions to students about their attitude and performance” (Kate_1_01:02:29).

However, having lower expectation on students reinforces students' low motivation in learning. It might ease the problem of having insufficient students, but in a long run, it will

damage the school's overall reputation. Kate expresses her frustration on this issue and says:

“再加上我們又有學生壓力,就是我們希望能夠留住這些學生,所以對他太嚴格有時候他更希望往外跑,再加上這個學校又不是什麼多好的學校,他可能就是給你往外跑,所以變成說我們對學生,在跟學生之間的拿捏喔,你又不能對他太嚴格,太嚴格的話會把他弄跑,太鬆,...其實現在學生又需要push,所以變成學生沒人給他push,他就比較懶散一點阿,就變成他學習動力就降低,他學習動力低,連帶的影響其他學生,就整個,阿(無力的嘆息)” (Kate_1_01:02:29).

“We also have pressure from the school that we'll have to try our best to keep the students. So, if we have a higher standard, students will tend to transfer to other schools. After all, we are not a school with good reputation. So, it is hard for teachers to judge what the best way to interact with students is. If we are strict, they will leave. If we have a lower standard, they become lazy. Students nowadays really need to be pushed; otherwise, they will have low learning motivation. And then, when one student have motivation problem, he/she will easily influence other students. One after another, sigh” (Kate_1_01:02:29).

From Kate's statement, we can find that teachers are disempowered because they are left with limited space for the final decision of grading. At the same time, teachers are overpowered by students because the school treats students as customers. When the survival of the school comes before the quality of education, it is inevitably for the school to come up with an alternative solution (possibly a corner cutting solution) in dealing with the problems at hand.

Besides, the MOE evaluation restricts teachers' instructional strategy and the school's curriculum development within a particular framework. For example, technology implementation is used as one of the indicators to determine teachers' performance in the process of the MOE evaluation, teachers are therefore, forced to adopt a particular instructional strategy that teachers might be less desirable with. On top of that, the MOE evaluation is shifting the curriculum development to a test-oriented one. The MOE evaluation is using the total number of language proficiency certificate students receive as an indicator to judge students' academic performance and the education quality the school provides. Having a weak record of this phase, Kate's school is less competitive in the evaluation. With the suggestions provided by the MOE

evaluation committee members, assisting students to pass standardized test for getting language proficiency certificate becomes the major focus of the curriculum development in this school before the reappraisal begins. Therefore, teachers are forced to teach to the test simply for the purpose of passing the evaluation. As Kate points out:

“因為評鑑他們會給我們一些建議,所以就變成我們就是要依照她們的建議去做修改我們的方向...課程目標,或是課程設計那邊需要做一些調整,然後再來很積極的部分就是...語言能力她們並不是很肯定,所以為了這部分,那我們學校就有給我們行成壓力,所以我們現在就是對學生的檢定考非常的積極,所以我們就是排多益課程阿,全民英檢,就是鼓勵她們要去考,就是一直在傳達這個訊息,你要去考多益,你要去考全民英檢,你要去考檢定考”(Kate_2_06:05).

“The MOE evaluation committee members will give us some suggestions and it turns out that we will have to adjust our directions based on their suggestions. It includes the educational objectives and curriculum design. Most importantly, students’ language proficiency and performance are not acknowledged by the MOE evaluation committee members. So, in this particular aspect, teachers feel pressure from the school and are expected to encourage students to get language proficiency certificate. In order to achieve this goal, we’ll have to offer courses related to TOEIC and GEPT. We also have to pass on the information of these types of standardized test and keep reminding students to take the test” (Kate_2_06:05).

From Kate’s description, it is found that the MOE evaluation is a restricted framework that determines how the curriculum should be designed and what the instructional strategy should be. Teaching under this kind of restricted framework, teachers lose their autonomy in applying their educational philosophy in their daily practice. Teachers are disempowered especially when the policy cannot speak to what actually happens in a real classroom. However, since the evaluation system is also used as a way to reward and punish the school and teachers, teachers will have no choice but to be compliant to the top-down policy as long as they still work in the system.

Among all the negative consequences the MOE evaluation unintentionally brings to ELL teaching and learning, there is still one positive consequence Kate mentions. Kate points out that the MOE evaluation serves as a monitoring system that motivates the school and teachers to

provide better quality of education to students. This can be identified from the extracurricular activities teachers are requested to arrange for students before the MOE committee members' visit. In order to impress the MOE evaluation committee members, the school endeavors to provide students with diverse learning opportunities. Therefore, teachers are asked to construct extracurricular activities in order to connect the school with the community and to engage students in the learning process. The number of extracurricular activities has been increased right before the MOE evaluation because the school can use this as a proof to solidate the record presented to the MOE evaluation committee members. However, Kate points out that if it is not for the purpose of passing the MOE evaluation, teachers do not have intrinsic motivation to fulfill this requirement. Kate says:

“可能平常就是一些該做的活動會去做,可是不會特別的就是會這麼趕阿,或是比如說會就是趕著在,就是大家會比較拖著一點,或許就是一個學期本來是舉辦三個活動,那因為你要評鑑的關係,就會比較積極一點,可能就會變double這樣...可是今天如果沒有評鑑的話,這個或許就不會這麼的積極趕著在一年之內把她完成,可是因為有評鑑的壓力,大家可能腳步就會加快,然後就會在評鑑之前有個成果出來” (Kate_2_03:05).

“Without the evaluation, we still will arrange activities for students. But, we won't have pressure from the time limit. There is a possibility that we will be more lay-back and procrastinated. But, now, due to the MOE evaluation, we will be more aggressive. If we originally have three activities in one semester, we'll now double it...If it is not for the purpose of passing the MOE evaluation, we will not have to rush and get it done within one year. Due to the pressure from the MOE evaluation, we'll pick up the pace and prepare us to be able to show the committee members the results before the MOE evaluation begins” (Kate_2_03:05).

In other words, without the evaluative pressure, teachers will have an attitude of procrastination toward organizing extracurricular activities that benefit students. Top-down pressure might bring negative consequences (such as corner cutting behaviors and the deprivation of teachers' autonomy), but at the same time, it can also motivate teachers to do a better job.

In response to the misaligned evaluation system, the school uses the strategy of cutting

corners for survival reasons. In other words, time and efforts go to things that are an emergency in terms of evaluation. For instance, the school has an aggressive attitude toward faculty promotion because this is what the MOE evaluation values the most. Instead of enhancing the education quality, reforming the curriculum or providing resources to teachers and students, the school makes more efforts on faculty promotion. Faculty promotion is the most efficient way to help the school to look good on the MOE evaluation. As Kate mentions:

“他這樣push老師,她們老師升等之後,...那升等之後,她們就師資上面非常漂亮,做一個表,然後到時候評鑑也很好看” (Kate_1_59:47).

“The school pushes teachers to get promotion. After teachers get promotion, the school can have a solid record of sufficient “qualified teachers”. Then, the school can make a chart and show it to the committee members in order to look good on the MOE evaluation” (Kate_1_59:47).

The way for faculty members to be promoted is through an evaluation process that mainly involves a review of faculty members’ publications. Therefore, in order to “encourage” teachers to be promoted, the school regulates the amount of publications teachers should have and allows teachers only a limited period of time to establish such a record (within three years).

Kate points out that:

“像我們最主要的問題還是,升等的條件就是你要發表,對,所以他會要你,他會希望你是三年以內嘛...因為這個跟他師資有關,所以他當然希望你能夠升等” (Kate_1_56:39).

“The major problem we have is to get promotion. Having sufficient academic research publication is the way to be promoted. Therefore, the school would like teachers to achieve this goal within three years. This is directly relevant to the number of “qualified teachers” this school has. So, of course the school will encourage teachers to get promotion” (Kate_1_56:39).

This credentializing process is not necessary a guarantee of a success of passing the evaluation, but it does give many credits to the school. Apparently, faculty promotion becomes the most useful voucher to persuade the Ministry of Education that the school can provide high

quality of education to students within a short period of time.

In addition, the school also uses the strategy of cutting corners in response to the negative consequences coming along with the misaligned evaluation system. For instance, failing the evaluation causes bad reputation to the school. The school has to suffer for being labeled as “a bad school” for failing to provide a high education quality. The bad reputation functions as an obstacle and causes more negative consequences when recruiting students. Therefore, for survival reason, school is forced to come up with an alternative solution in response to the negative consequence of MOE evaluation. One example of the school’s corner cutting behavior Kate mentions is about the process of student recruitment.

“學校整個改變政策,就是過來的話,我們大學招生那部份可能就是只占幾percent,然後大部分是獨自招生的部分...學校發現說可能我們在大學紙考分發,就是這些學生的話我們可能,嘖,搶到的市場,因為過來學生也越來越少了,所以我們可以搶到的學生喔,可能也越來越少,所以乾脆就是自己找,獨立招生,那獨立招生的話等於說你招生的學校就比較不受限制...好了,這個不能講太多,不然等一下被學校.... 因為學校有的認為這是秘密,就機密啦” (Kate_1_20:48~22:04).

“The school has changed the policy of recruiting students. We prefer to have individual recruitment rather than having a joint recruitment. This is because my school found that it is less possible for us to recruit sufficient students through the original recruiting system. Having an individual recruitment is less restricted. But I can’t tell you too much about this. This is under the table and my school consider this strategy as confidential” (Kate_1_20:48~22:04).

Form the example Kate gave, we can find that working in this particular school context, teachers are forced to take part in the process of corner cutting. This solution is usually under the table because it finds a loophole in the regulations and plays around with it. However, the action the school takes is not fundamentally reforming the school into a better place for students. For a long term, the shortcut is essentially undermining the education system. This amplifying casual loop not only makes the disqualified schools even more disqualified, but also shows that the entire evaluation process is a rather political, credentializing process.

From Kate's case, it shows that teachers who are situated in the context of Institute of Technology all experience the evaluative pressure both from the school (teacher evaluation) and the Ministry of Education (evaluation on the school). Teachers complain about the evaluation system in that it is an unfair system for several reasons. First, it is political. The original purpose of evaluation is to ensure a better education quality to students. However, for survival reasons, schools have to manipulate the records and to adjust the curriculum in order to fulfill the interests of the Ministry of Education. Their goal is not to fulfill the interest of students, but the Ministry of Education who has the power to authorize funds and to decide their survival. On the other hand, the teacher evaluation is also political especially when the school has financial difficulty. Therefore, when the political factor is involved in the evaluation process, the original purpose of evaluation will be twisted. It therefore, does not aim at offering the ultimate benefits to students, but to the ones who hold the substantial power in this game.

Second, it is not individualized. The Ministry of Education uses the same standard to evaluate all Colleges of Technology regardless of their geographic allocation, the organization structure, student number, their economic situation, their major efforts and general barrier, etc. If the ultimate goal of the evaluation is to motivate schools to provide better education to students instead of using the evaluation to eliminate schools, a standardized evaluation system might be a poor fit because it overlooks the importance of the issues that are culturally relevant in the local context. Then, it will be easily called into question about the validity of the evaluation system.

Third, it overlooks the real needs and concerns of teachers and students. As Kate stated that the committee members are professors from public universities or private universities who are not familiar with students' real needs and teachers' concerns in their daily practice in the context of the Institute of Technology. On top of the lack of understanding, having top-down

evaluation criteria as a lens to evaluate the school can cause a misunderstanding and misinterpretation of the schools being visited. If the evaluation itself is an unfair system and causes teachers' distrust, the positive reinforcement along with the evaluation might not necessarily encourage a change of teachers' instructional strategy.

Situated in this top-down evaluative context, it is apparent that the heavy workload coming from teaching, administrative duties and students counseling makes the issue of lack of time even worse. On top of that, the school has management and financial problems and the evaluation system itself has been called into question about its validity. With these issues at hand and when teachers are situated in this evaluative context, technology implementation becomes a requirement without further being evaluated regarding its appropriateness and its adaptability. In other words, there is a weak infrastructure of the top-down decision of technology implementation. All together, these issues cause an amplifying loop and teachers are overwhelmed and disempowered by the spiral.

In conclusion, the misaligned evaluation system leads to cutting corners, cosmetic compliance, an attitude of passing the buck and a serious lack of *esprit de corps* which make the whole situation that exists in response to the misaligned evaluation even worse. All of these negative consequences altogether cause an amplifying casual loop. In other words, the original purpose of the evaluation is to ensure a better education quality for students. However, due to the "dumbing down" of the evaluation, the evaluation turns out to be a punishment to the school and teachers rather than fundamentally reforming the school into a better place for students. The dumbing down of the evaluation suggests that this evaluation is not only highly political but also a nominal credentializing process. It seems that the Ministry of Education uses the strategy of "letting it die" to deal with school that have serious academic and administrative issues. The

spiral down may therefore suggest the Ministry of Education's attitude of purposive neglect in dealing with schools that fail to survive in the evaluation process.

Beliefs

Kate's perceptions of CALL implementation (RQ1)

Research Question 1:

What are ELL teachers' perceptions of technology implementation for instructional purposes?

The analysis indicates that seven items summarize Kate's perceptions of technology implementation for instructional purposes.

1. Kate perceives technology implementation as programming and hardware maintenance.
2. Kate believes that technology implementation is a burden and not a "must-have."
3. Kate perceives technology as entertainment and can only be used for students' self-directed learning.
4. Kate believes that technology is dehumanized.
5. Kate perceives technology as a great facilitator of preparing the lessons.
6. Kate believes that technology is a powerful tool for classroom management.
7. Kate believes that technology can facilitate learning.

Elaboration of Point #1

In defining the concept of "technology implementation," Kate refers "multimedia" to the use of innovations such as presentation software, CD players, animation production, online games, and the Internet. Among these innovative devices, Kate uses a CD player and PowerPoint in her instructions for pedagogical purposes. When talking about the actual use of computer technology for instructional purposes, Kate perceives it as programming (software development) and hardware maintenance. Kate also mentions that it is the idea of programming and hardware maintenance that inhibits her from the implementation of technology for instructional purpose.

As Kate says:

“Q: 你對電腦應用有興趣嗎?

A: 我會很常上網,就是瀏覽東西,可是你說要去操作,去這種牽涉到軟體啦程式啦的東西的時候,這種設備的東西,我就興趣不是這麼大” (Kate_3.1_14:56).

“Q: *Are you interested in technology implementation?*

A: I often surf the Internet to find information. But I am not interested in handling software and hardware” (Kate_3.1_14:56).

“Q:現在聽起來你的concern是你覺得那些東西是你要自己去製作
A:對,技術層面的部分” (Kate_3.1_30:25).

*“Q: It sounds like your central concern regarding technology implementation is that you think you have to produce the materials on your own.
A: Yes. Especially when it involves the technical aspect” (Kate_3.1_30:25).*

This perception leads Kate to believe that the field of ELL and the use of computer technology for instructional purpose do not share similar focus. While language learning emphasizes more on learning through communication and interaction, the use of technology deals more with the technical aspects. Kate justifies her infrequent use of computer technology for instructional purpose by pointing out that computer technology and ELL teaching and learning are two different things. Kate says:

“Q:像我現在做這個題目,訪問的也是大學老師居多,真的也不是那麼多人在用
A:因為我覺得可能語文老師她們對科技這方面知識不多,涉略不多,我覺得語文和科技感覺上是兩個領域的東西
Q:怎麼說?
A:就是語文重在講,科技是比較電腦的東西,你說上網,這是不會有什麼問題啦,可是我發現蠻多的啦,這種英文老師阿什麼的,只有基礎的電腦技能” (Kate_3.1_23:33).

*“Q: I also found that not so many college instructors implement computer technology in their instruction.
A: I think this is because language teachers have limited background knowledge about technology. We don’t study a lot of this field. I think foreign language acquisition and technology are two different things.
Q: How so?
A: Foreign language acquisition focuses more on oral conversation. Technology is more about computers. We don’t have problems of surfing the Internet. But I found that many English instructors just have basic computer skills” (Kate_3.1_23:33).*

To Kate, computer technology cannot benefit to ELL teaching and learning as much as policymakers and administrators have claimed. Therefore, Kate perceives technology implementation for pedagogical purposes to be the least desirable because it requires more

advanced computer skills in developing multimedia learning materials and handling potential mechanical problems. Since Kate only has basic computer literacy (e.g., browsing the Internet) and the school does not provide sufficient technical support, perceiving the use of computer technology as programming and hardware maintenance is a major reason that intimidates Kate from implementing technology in her instruction.

Elaboration of Point #2

Technology implementation cannot assist Kate in solving the issues she encounters in her daily practice; on the contrary, technology implementation will bring an extra burden to teachers. Relating technology implementation to the idea of programming and hardware maintenance makes Kate believe that technology implementation is challenging. Having the perception of programming embedded in mind, to Kate, successful technology implementation requires ongoing cultivation of one's computer skills and implementation strategy. In other words, it requires more time commitment and extra effort. However, when the lack of time and heavy workload are two major issues that Kate needs to deal with in her daily practice, it is more challenging for her to have an intrinsic motivation to acquire more advanced computer literacy for successful technology implementation. The use of computer technology for pedagogical purpose therefore, becomes a minimal compliance to the top-down policy rather than an action that is driven by Kate's intrinsic interests and needs. Without intrinsic interests and needs as a motive, Kate considers technology implementation just as one of the alternatives that ELL teachers can adopt in their instructions rather than a "must-have." In other words, Kate does not perceive a technology-rich learning environment as essential in ELL teaching and learning; instead, technology implementation can always be replaceable by other instructional strategies. Kate argues that:

“對我來說,我覺得那些所謂的科技器材,我覺得它不是必要的...就是你不一定要透過它才有辦法進行課程,才有辦法在學生學習上面更...,就是才能教他”(Kate_1_30:44).

“To me, those so called high-tech facilities are not necessary...It’s not that you “have to” instruct with the use of computer technology. The class still can go pretty well and I still can teach students without the assistance of computer technology” (Kate_1_30:44).

“因為其實我覺得需要性並不是那麼強,因為我覺得語文你不是說非它不可(一個字一個字的講來強調這四個字),它不是一個必要性(強調這三個字)的東西,我覺得,好,它是可以加分的東西,但是它不是一個必要性的東西”(Kate_3.1_15:27).

“I don’t think technology implementation is necessary (emphasizing the word “not necessary” by addressing it word by word slowly). In foreign language learning, it is NOT a “must-have”. It can be a “plus”, but never a “must-have”” (Kate_3.1_15:27).

When teachers do not perceive technology implementation as a must, they will certainly not prioritize technology implementation and will be lacking intrinsic motivation to spend time on it. I often hear teachers saying that “teachers still worked and did perfectly before computers were invented.” Kate’s perception of technology implementation perfectly demonstrates that it is not that teachers are reluctant to change; instead, it is because teachers do not believe that technology can bring much change to teaching and learning.

Elaboration of Point #3

Kate perceives computer technology as a tool for entertainment rather than for learning. Kate points out that technology implementation cannot ultimately benefit ELL teaching because it cannot promote students’ learning to a higher level. Kate does not perceive the use of computer technology for learning as serious learning because computer technology has a feature of entertainment in it. Kate mentions that:

“我知道學生她們都會去學校上網,可是她們上網的話都不是在學習耶,哈,要嘛就是找資料,因為課業需求,要嘛就是上網看一些blog,或是聊天什麼的,她們其實反而真正用在學習上不多”(Kate_3.1_38:45).

“I know students will use the wireless school provides to surf the Internet. But, they are never doing it for learning. Ha! They sometimes surf the Internet for online information because it is a course requirement. Most of the time, they use the Internet to read blog

articles and online chatting. The actual use of Internet for the purpose of learning is limited” (Kate_3.1_38:45).

Kate also further ironically claims that students’ use of computer technology is mostly for leisure purposes (e.g., gaming) rather than for the purpose of learning. Kate does not believe that a higher-order thinking ability can be acquired through gaming or the use of computer technology. She does not consider gaming as serious learning, either. As Kate states:

“Q:那你怎麼看那些,現在學生電腦能力都比老師強,她們可能私下接觸到電腦或是私下不管學習什麼東西,她們倚賴電腦科技的層面也很廣
A:是阿,她們就倚賴在電玩阿,哈...我覺得學生只是很enjoy那個過程,對,他認識這些人了,可是那還是在知識層面上面,我覺得要更深層,更深層的這個部分我覺得是遊戲方面沒有辦法吸收得到的” (Kate_3.2_05:08).

*“Q: What’s your opinion about the young generation’s use of computer technology? Students nowadays have a stronger computer skill than teachers. They rely on computer technology in several aspects, including learning things in their leisure time.
A: Yeah, right, they rely on computer for the purpose of playing computer games. Ha! I think students just want to enjoy the process of playing. They stayed at the superficial level of getting to know some information. I think they should develop a higher-order thinking ability. I don’t think gaming or technology implementation can do much on this” (Kate_3.2_05:08).*

Kate believes that the role of teachers and the purpose of schooling are to teach students new knowledge. According to Kate, computer technology cannot assist teachers in achieving this goal. Therefore, when talking about her perception of technology implementation, Kate perceives computer technology is best used for students’ self-directed learning after class. Kate points out that:

“因為其實我們在課堂上面會比較要傳達的是知識上面的東西,所以這種e化我覺得是對學生“課後”的幫助” (Kate_2_51:55).

“I think the major focus of my course will be on “transmitting factual knowledge” to students. So, I think technology-enhanced learning is more beneficial to students’ self-regulated learning “after school”” (Kate_2_51:55).

Overall, Kate’s notion of students’ use of computer technology and the role of computers in education demonstrates her negative perception of technology implementation and can explain

the reason why she is hesitant toward technology implementation.

Elaboration of Point #4

Kate's beliefs of ELL teaching and learning correlate with her perception of technology implementation as well as the reasons underpinning her use of technology in her instruction. More specifically, Kate believes that the dehumanizing feature of computer technology fails to make learning happen. For example, Kate believes that the role of teachers is to transmit knowledge and learning will only occur through knowledge transmission. To Kate, transmitting knowledge can only be successfully done through human instructors' guidance and technology cannot assist teachers in reaching this goal. This is because Kate believes that interacting through computer technology is dehumanized and the communication is neither efficient nor effective. Therefore, students' learning through the interaction with computer technology is considered as a way of reviewing what have been taught in the classroom rather than a way of acquiring new knowledge. Kate says:

“Q:你會覺得這些電腦的東西應用在學習上,是給學生用的幫助比較大,而應用在教學上的幫助反而比較小一點嗎?”

A:對阿,因為那算是學生課後的自學,就是等於說它那樣的一個電腦軟體,學生是不需要老師的,因為我覺得課堂上是需要老師去做解說,那它那個的話等於是說學生自學”(Kate_3.1_37:00).

“Q: Are you saying that the use of computer technology is more beneficial to students' self-regulated learning rather than teachers' instruction?”

A: Yes. I think computer technology is more about learning through the interaction with the software. That means students they don't need teachers' assistance. They can learn on their own. But, I think in the school context, teachers' instruction is everything. So, the use of computer technology is for students' self-regulated learning” (Kate_3.1_37:00).

It is the dehumanizing feature of computer technology that results in Kate's hesitant attitude toward technology implementation. Even though Kate is hesitant toward technology implementation, she still sees related advantages of technology implementation for ELL teaching and learning. Kate identifies three aspects that technology (such as the use of PowerPoint) can

facilitate ELL instruction and students' acquisition of a foreign language. The three aspects will be elaborated in the following section.

Elaboration of Point #5

Kate perceives computer technology as a facilitator of lesson preparation. For instance, technology can successfully facilitate teachers to organize their thoughts in advance so that they can deliver the key points and major arguments in their instructions more effectively. Besides, the use of technology allows teachers opportunities to rehearse the course content in advance and helps teachers to smooth the flow of instruction. As Kate mentions:

“Q: 那就老師個人呢?就是在教學上的幫助有沒有?或是影響?

A: 恩, 有好有壞, 不好是變成事前要做很多準備, 可是這樣做準備之後其實也讓我們老師事先把你的流程順過一次啦, 你過來要教這種東西, 你在做PPT的時候, 其實你自己也就把它run過一次了” (Kate_1_01:22:34).

“Q: Does technology implementation have any impact on your teaching?”

A: Well, pros and cons. The disadvantage of technology implementation is that teachers have to have a lot of preparation in advance. Of course when teachers are preparing the technology-based teaching materials, we can rehearse the lesson plan beforehand. For example, when I create a PowerPoint slide, I can practice and rehearse the course content at the same time” (Kate_1_01:22:34).

On top of that, Kate perceives the Internet as a powerful vehicle for searching supplementary learning materials. According to Kate, contents in textbooks are sometimes considered outdated that fail to promote students' interests in learning. Since a text-based class is considered too systematic and lacks flexibility, online resources can add more color to a traditional class that relies merely on textbooks. In that case, computer technology is perceived as a facilitator of lesson preparation.

“Q: 所以你在備課的部分你也會上網去找一些資料?

A: 會阿會阿, 會會會會

Q: 然後也會用一些影音的東西?

A: 對, 因為我不喜歡完全照著課本上, 我覺得完全照著課本上非常無趣, 而且我覺得太制式化了, 而且我覺得課本上有些東西, 他其實對這批學生來講也不是很實

用”(Kate_1_32:43).

“Q: So, when you are preparing the teaching materials, will you also go online for more information?”

A: Yes, of course.

Q: Will you also adopt digital videos and audios as part of your teaching materials?”

A: Yes, I will. I don't like to fully rely on textbooks. I think the instruction becomes boring and over-systematic if I completely follow the lessons in textbooks. Besides, I sometimes feel that lessons in textbooks are not helpful to the young generation. They are not practical enough” (Kate_1_32:43).

The above descriptions demonstrate that Kate does not perceive computer technology as a facilitator in students' learning and teachers' instruction, but she is affirmative of the power computer technology has in assisting teachers in preparing lessons. To Kate, computer technology is more of an organizer of the materials and a tool to access various resources.

Elaboration of Point #6

In addition to facilitating teachers in course preparation, computer technology is also a powerful tool for classroom management. For example, with the use of technology for instructional purposes, it reduces teachers' time and effort on writing on the blackboard. It also refreshes students when computer technology is used in a long day of the school work. As Kate says:

“我覺得最主要就是你在課程的流程上面你就少了書寫的時間嘛,然後你操縱你可以來來回回,這個就是有利於教材的操縱,會比較方便,然後學生會有,就是是覺得效果,他會覺得,ㄟ,不一樣,新鮮,對,可是其他,你說真的學習效果上面喔,成效其實不見得” (Kate_1_01:21:33).

“To me, it (PowerPoint) is more about saving my time on writing on the blackboard. Besides, you can show them the slides back and forth. So, it makes it easier for me to demonstrate the materials to students. Some students will also feel interesting and attracted by the visual aid. But, as to the effectiveness on students' learning achievement, it doesn't really have a strong impact” (Kate_1_01:21:33).

Kate's assertion shows that she relates the use of computer technology to a functional purpose rather than at a critical level. It helps teachers to manage the class time, the flow of the

instruction, and students' attention better.

Besides, Kate perceives that technology implementation can create a more dynamic learning environment and can bring variety to her instruction. Once the classroom dynamic is changed and learning becomes fun, students' learning motivation is more likely to be promoted.

Kate points out how the classroom dynamic changes when PowerPoint is used in her class:

“我其實那堂課有用到蠻多這種科技,就是用PPT,做簡報啦,簡報,然後叫她們用email給我,然後那堂課至少比較活潑,而不是死氣沉沉,一直拿書在看”(Kate_1_38:39).

“Actually, I do technology implementation a lot in that class. I use PowerPoint to do a briefing. I also ask students to send emails to me. I found that the atmosphere in the class is at least more engaging rather than deathly still. Students are not simply holding a textbook and sit there to read” (Kate_1_38:39).

Besides, the use of computer technology can vary the lessons by bringing in different types of materials and different ways of representing the contents. Kate states that students tend to give positive comments on teachers who use computer technology in their instruction. Once teachers are recognized as tech-savvy, they will be empowered. This can certainly motivate teachers in their teaching career and have positive impact on the classroom dynamic. Kate says:

“Q:那你覺得科技對你的教學,有什麼影響?”

A:我自己認為說,學生會覺得說這個老師不是只會純粹的教學,她會用一套,她的教材會比較多樣化,她不是只照著課本上,我覺得可能就是學生對老師的印象會覺得這個老師比較多元,然後我自己聽了會比較高興,哈,會比較有點虛榮心”(Kate_3.1_28:30).

“Q: How does technology implementation impact your teaching?”

A: I think students will have a better impression on the teacher who uses computer technology for instructional purpose. They will consider this teacher as tech-savvy whose teaching materials and teaching strategy are more diverse because the teacher does not only rely on textbooks. If my students perceive me as tech-savvy, I will be thrilled. It's all about vanity. Ha!” (Kate_3.1_28:30).

Elaboration of Point #7

Kate points out that technology implementation can facilitate students in language learning. For instance, the visual representation can draw students' attention, can leave students

with greater impressions of the content and can enhance students' understanding of the content.

“比如說可以做動畫啦,什麼的,當然如果效果好的話,它就會是個加分的東西,它讓學生印象更深刻,讓她們更了解,喔,原來是這樣” (Kate_3.1_04:19).

“For example, we can use computer to produce some animation to help students have a greater impression. If it is well-designed, technology implementation will be a plus. It assists students to have a better understanding of the course content. It helps them to comprehend the content more easily” (Kate_3.1_04:19).

Even though the entertaining and dehumanizing features of computer technology makes Kate believe that computers cannot help students acquire new knowledge, the above statement shows that Kate perceives computer technology of having a strong power in representing abstract concepts. In other words, if computer technology is properly used, it can assist students during the learning process.

Kate's central concerns regarding CALL implementation (RQ2)

Research Question 2:

What are ELL teachers' central concerns regarding technology implementation for instructional purposes?

The analysis indicates that three items summarize Kate's central concerns regarding technology implementation for instructional purposes.

1. Requires more time commitment.
2. Unreliability.
3. Dehumanization.

Elaboration of Point #1

Kate is aware that the use of computer technology is advocated in the field of ELL and she identifies some potential advantages of technology implementation. However, Kate also points out three major concerns regarding the use of technology for instructional purposes. First, Kate believes that technology implementation requires a greater time commitment on preparing the teaching and learning materials. When teachers are burdened with administrative duties and heavy teaching loads, teachers are inclined to be resistant toward technology implementation.

The use of computer technology for instructional purpose also costs a lot of class time when teachers set up and operate the machine, especially when teachers themselves are not familiar with the function of the equipment. As Kate mentions, she prefers to interact with students without the use of technology because technology does not necessarily bring many differences to the effectiveness of the instruction.

“我就說因為機器的那種設備我不熟悉,我沒有辦法做,第二個就是我比較習慣,喜歡直接跟學生..一個是設備的關係啦,然後一個就是個人興趣,我覺得你還要去按這個設備,又要浪費很多時間,那你直接問學生不是比較快嗎?” (Kate_1_33:49).

“First of all, I am not quite familiar with the facility provided in the language lab. So, I don't use it. Secondly, I personally prefer to interact with students directly. So, there are two reasons. One is about the equipment and the other is about my personal preference. I think it will waste a lot of my time if I will have to push the button and operate the machine. Don't you think it is much faster if you just ask students questions directly?” (Kate_1_33:49).

This assertion specifically explains that the lack of time and the dehumanizing feature of computer technology are the major reasons that keep teachers from frequently implementing computer technology in their instruction.

Elaboration of Point #2

Innovative devices have the problem of unreliability. Therefore, when technical problem occurs, it interferes with the flow of teachers' instruction and costs time to fix the technical problem. In this case, technology implementation is considered a burden on top of the issue of the lack of time. It cannot assist teachers in solving one of the major concerns they have in their practice; instead, there will be more trouble coming along. Given to the situation that the school does not offer technical support to teachers and that Kate's limited computer literacy offers her little confidence on handling technical problems, Kate demonstrates a hesitant attitude toward technology implementation.

“Q:可是在就老師個人,就是說學生成效你覺得沒有,那就老師個人呢?就是在教學上

的幫助有沒有?或是影響?

A:就是還是有幫助,其實還是好的,只不過就是做PPT其實還是蠻花時間的,而且就是我跟你說過,萬一到時候出了什麼問題

Q: technical problems?

A: technical problems” (Kate_1_01:22:34).

“Q: You mentioned that technology implementation has limited positive impact on students’ academic achievement. How about teachers? How can technology implementation impact your teaching?”

A: Not much. Besides, creating PowerPoint slides takes me a lot of time. What if something bad happened during my instructions...”

Q: Technical problems?”

A: Technical problems” (Kate_1_01:22:34).

The above statement clearly shows Kate’s fear of the technical problems that might occur during her use of computer technology in her instruction. It also demonstrates that when limited resources and supports are provided, teachers are unwilling to risk their time and efforts on things that cannot guarantee a successful instruction. It is a choice of where time and efforts should go when resources are limited and workloads are overwhelming.

Elaboration of Point #3

Finally, Kate perceives technology can cause the problem of “dehumanization.” Kate asserts that technology fails to provide an “authentic” context for ELL learners. The intervention of technology makes the conversation practice unreal. It distorts the real situation of our daily life interaction. Therefore, Kate prefers face-to-face interaction because interaction through technology makes the communication between teachers and students less efficient. Kate explains how inconvenient it is when interacting with students via the use of the facilities in the language lab.

“我們平常對話,我們跟,實際上對話的時候,你有在戴耳機跟人家對話嗎?... 所以我頂多放對話給學生聽,然後過來我直接問學生問題,直接做最直接的溝通,而不再去透過,好,那我按誰,誰就要回答我這樣子,對我來說,我覺得那些所謂的科技器材,我覺得它不是必要的” (Kate_1_30:44).

“In daily conversation, have you seen people communicating with each other with a

headset on? So, at most, I will just play the tape of the conversation dialogues to students. Then I will directly ask students question and do the face-to-face communication. I will not interact with students through the high-tech equipment. I will not push a button and assign a student to answer my question. I don't think it is necessary to interact with students through computer technology” (Kate_1_30:44).

Apparently, Kate perceives technology implementation has little relative advantages to ELL teaching and learning. These concerns fail to persuade teachers to adopt an innovative instructional strategy.

Actions

Technology Implementation Actions (RQ3)

Research Question 3:

What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?

The analysis indicates that four items summarize Kate’s patterns of action in response to top-down decisions regarding technology implementation in her context.

1. Kate initiates an act of cosmetic compliance in response to the top-down, misaligned policy.
2. Kate remains silent in response to the top-down, misaligned policy.
3. Kate justifies her limited use of computer technology by a) passing the buck, b) warranting the role of teachers, and c) being ironic and downtoning the function of computer technology.
4. Technology implementation is prioritized as low.

Elaboration of Point #1

The actions Kate takes in response to the top-down evaluative pressure are compromise and cosmetic compliance. In other words, Kate uses the strategy of corners cutting in order to play a game within the game. Apparently, the whole process is highly political. For instance, in response to the teacher evaluation, Kate fulfills the minimal requirement rather than valuing the criteria that requires time commitment and extra efforts. A lot of the teachers in Kate’s school do not have an intrinsic motivation to engage in professional development unless it becomes a requirement. Teachers are not motivated to actively involve in things that are beneficial to ELL

teaching and learning. This is partly because of the issues of the lack of time and heavy workloads, and partly because the bad reputation of the school damages faculty morale so that teachers are not committed to their teaching. This amplifying causal looping also reflects that teachers' decisions are often made for survival reasons when situated in an evaluative context. In other words, time is usually efficiently used on things that can bring the most benefits to teachers. Kate mentions her colleagues' attitude toward the professional training workshop that the school provides to faculty members. Teachers tend to have a procrastinated attitude and are not motivated in attending the training workshop. As Kate says:

“Q:就覺得停留在目前也不錯阿,沒有什麼太多必要..

A:對對,或者是說他沒有必要,如果說他沒有規定,他如果是說自由參加,他沒有叮嚀老師說要去的話,我想這個報到率應該..

Q:可是這不是應該也可以算在,比如說那個什麼裡面嗎?

A:對阿,這就是我們的績效,但問題是有些老師可能就是,他好像一年至少要幾場嘛,他可能會選擇性

Q:喔,就是已經有分配好了

A:對阿,比如說他可能會自己去,像其他系有些老師她們可能就會發表,那也算是阿”
(Kate_1_55:39).

“Q: Are some teachers satisfied with their current instructional strategy so that they don't think it necessary to have professional development?”

A: Yes. Or you can also put it in another way that it is not necessary for them to change because they are not strictly requested to do so. If the school allows teachers to attend professional training program on their own free will without any constant reminder, the rate of attendance will be very...

Q: I thought the number of the attendance of professional training program can be credited to the teacher evaluation.

A: Yes. That will be counted as part of our achievement. But the problem is, the school only requires teachers to attend certain sessions within a year. Some teachers will then do it selectively.

Q: Oh, teachers can allocate their priority.

A: Yes. And some teachers in other department will even choose to have academic publications rather than receiving professional training. That also counts”
(Kate_1_55:39).

Apparently, teachers only pick the requirements that they perceive effective and manageable instead of fulfilling all the requirements. As long as teachers reach certain

percentage of the overall requirements, they will not fail the teacher evaluation. This minimal compliance is one of the examples of teachers' corner cutting behavior in response to the top-down evaluative pressure.

Elaboration of Point #2

According to Kate, the MOE evaluation is directing the curriculum development into a test-based one. Even though Kate disagrees with this curriculum reform, she remains silent and complies with the top-down policy. For example, to determine whether the Applied English department offers high quality of education to students, the MOE evaluation committee members look at whether students have progressed in their English proficiency. To do so, the committee members examine the total number of language proficiency certificates students earned. Apparently, the committee members believe that language proficiency certificate (earned through standardized tests, such as TOEFL, TOEIC, and GEPT) is a warrant of language competency. The number of language proficiency certificate students received is used as an indicator to measure students' academic achievement. Therefore, in order to successfully pass the evaluation, the school will transfer this pressure down to teachers. In response to the top-down pressure, teachers reconstruct their curriculum around what's being tested in order to facilitate students to earn a language proficiency certificate. As Kate points out:

“學校後來在這方面蠻給大的壓力...從評鑑之後,我們學校就對證照檢定非常的積極”(Kate_2_09:13).

“The school gives us a lot of pressure. After the MOE evaluation, the school is very aggressive about encouraging students to get certificate” (Kate_2_09:13).

However, Kate questions whether standardized tests can truly reflect students' language proficiency. Kate points out that it is only testing students' test-taking skills and students are encouraged to learn what is testing. Kate says:

“A:我覺得如果說他可以提升學生的語言程度的話我覺得其實也無妨,可是就是說,怕變成有時候強調過度,就變成大家又變成為了考試在學習,我覺得就是變成有一點強調過重了,就變成是為了準備考試考TOEIC而忘了其實比較重要的是尤其是在實質上的語言應用,我覺得有稍稍的過頭了...成績提升了,代表說她們聽力真的變好了,還是說她們真的有教她們考試技巧,變成會考試了,我覺得這個成績好他有兩點,可能是她們會了,另外一種就是她教她們考試技巧,所以我覺得這個還有待商榷” (Kate_2_17:36).

“A: It is fine if it can really promote students’ language proficiency. But, I am just afraid that if we overemphasize it, it will turn out to a situation that students are learning for the purpose of test taking. I am afraid that if we overemphasize on getting certificate and then endeavor on preparing TOEIC, people will forget the importance of language learning should be on application. I think currently, the issue of getting certificate is overemphasized... What does it mean when students get a higher score on the test? Does it mean their listening comprehension ability is better or does it mean they are trained to have a better test-taking skill? I think having a higher score means two things: maybe they really acquire the knowledge or they just acquire a better test-taking skill. So, the validity of the language proficiency certificate is still questionable” (Kate_2_17:36).

The MOE committee members’ interference of the curriculum development by “kindly” advising teachers to teach to the test demonstrates teachers’ disempowerment in determining the objective of the course and the content to be taught. Even though Kate does point out her concern of the issue of the overemphasis on standardized test, she still follows the Ministry of Education committee members’ suggestions. Teachers do not speak up for their autonomy in deciding the design of the curriculum; instead, they tend to have a more compromising attitude. Kate even persuades herself that language proficiency certificate can at least be used by students as a vehicle to the success for the competition in the future job market. As she says:

“A: 你通過檢定考不代表你真的,喔,你可能考試成績考得很好,當然你以後出去是有用的啦,對,因為現在沒辦法,現在都是,現在出去其實都是要看證照這些,然後,可是會考試並不代表說你真的能夠講得很好” (Kate_2_17:36).

“Passing the exam doesn’t mean your language proficiency is really qualified. I know it is really beneficial to students in the future job market if they have language proficiency certificate before graduation. We can do nothing about this because this is currently what the industry values. But, having a high score from the exam doesn’t really mean you are competent in English speaking” (Kate_2_17:36).

Kate's compromising attitude comes from the fact that there is no teacher union for teachers in the higher education in Taiwan so that individual teachers do not have the power to fight against the whole system. When there is no space for teachers to truly reveal their concerns, it is inevitable for them to be silent. Situated in an evaluative pressure, teachers' decisions are made for survival purpose as a matter of course; teachers have no choice but to be compliant with the top-down policy. In the following, Kate mentions how the MOE evaluation shifts the curriculum development and teachers' instructional focus. She says:

“因為評鑑他們會給我們一些建議,所以就變成我們就是要依照她們的建議去做修改我們的方向...課程目標,或是課程設計那邊需要做一些調整,然後再來很積極的部分就是...語言能力她們並不是很肯定,所以為了這部分,那我們學校就有給我們行成壓力,所以我們現在就是對學生的檢定考非常的積極,所以我們就是排多益課程阿,全民英檢,就是鼓勵她們要去考,就是一一直在傳達這個訊息,你要去考多益,你要去考全民英檢,你要去考檢定考”(Kate_2_06:05).

“The MOE committee members will give us some suggestions and then we have to modify our direction based on their advice. This includes the objective of the course and our curriculum design. Besides, they are not happy with our students' language proficiency. So, in response to this issue, the school gives us pressure on promoting the total number of language proficiency certificate students get. The school is very aggressive about this. So, we have to offer courses such as TOEIC and GEPT. We have to encourage students to take the exam and keep passing on the information. We have to remind students, “You have to take GEPT. You have to take TOEIC. You have to get the language proficiency certificate”” (Kate_2_06:05).

Teachers' silence and compliance to the top-down policy demonstrate teachers' disempowerment during the MOE evaluation process. While educators do not necessarily view the top-down policies as appropriate, teachers' fulfillment of and compliance with the misaligned policies might lead to the undermining of the overall education quality in a long run.

Elaboration of Point #3

Regarding the action Kate takes in response to the top-down decision of technology implementation, Kate justifies her limited use of computer technology for instructional purpose by a) passing the buck to the ineffectiveness of technology implementation, b) warranting the

role of teachers, and c) being ironic and downtoning the function of technology.

First of all, when talking about her experiences of technology implementation for instructional purposes, Kate justifies her limited use by passing the buck to the ineffectiveness of technology implementation. According to Kate, the use of computer technology apparently does not bring too many differences to the effectiveness of her instruction and cannot fundamentally benefit students' learning achievement. Given to the situation that technology implementation is no better than a traditional instructional strategy, Kate does not see it necessary to adopt this new instructional strategy, especially when technology implementation requires training and more time commitment. Kate further explains that overemphasizing technology implementation will just burden teachers in addition to the heavy workload and makes the issue of the lack of time even worse. As Kate points out:

“A:可是我覺得e化如果在教學方面,我覺得過於強調e化,我覺得有它是很好,它可以是個輔助,可是問題是我覺得不需要過於強調啦,我覺得過於強調你會太偏了

Q:怎麼說?

A:因為很多東西其實不是靠電腦就可以,變成說其實你過於強調e化變成說老師又要去,我覺得它其實一方面增加老師的負擔

Q:怎麼說?

A:你老師變成說被強迫必須要去了解這些東西,然後要去學習使用這些東西,要去製作這些東西,然後對老師變成是一種相對的是一種增加一份工作”

(Kate_2_48:08~51:20).

“A: I think e-learning is good but we should not overemphasize it.

Q: How so?

A: It is because computers cannot resolve all the issues we have in our daily practice. If we overemphasize technology implementation, it will just become an extra burden to teachers.

Q: Tell me more about it.

A: Teachers will then be forced to understand the innovative tools, to learn how to use it and to adopt the skills to develop teaching materials with it. Relatively, it is another duty on top of the heavy workload” (Kate_2_48:08~51:20).

The above statement demonstrates that Kate passes the buck to the ineffectiveness of computer technology on ELL teaching to justify her limited use of computer technology in her

instruction. Once teachers do not see a bigger benefit in an innovative instructional strategy, they do not perceive it necessary to make a change.

Kate further relates her infrequent use of computer technology for instructional purposes to her educational philosophy. Kate believes that the knowledge and concepts teachers transmit to students are the major factors that foster students' learning. As Kate claims, the focus should be on the content being taught, not on the tool or approach being adopted. Therefore, when Kate was asked about her plan for her future instructional strategy, she revealed that technology implementation still remains as the least desirable choice. Kate states:

“Q:那以你目前整個狀況來說,包含教學還有自己個人電腦能力來說的話,未來你會比較傾向於多用還是少用?還是維持現狀?

A:會維持現狀吧,就是用一定的,我也不會每次都把它變成我課堂上的重點之一,我覺得他只是輔助教學,重點還是你的教學內容” (Kate_3.1_16:04).

“Q: Considering your current computer literacy and your workload in your teaching and administrative duties, what’s your tendency toward technology implementation? Do you intend to use it less, more, or do you prefer to stick to the status quo?”

A: I think I will stick to the status quo. I will just use what I am using now and I don’t intend to turn the use of computer technology into the focus of my course. I perceive it as an assistance and I think the focus should be on the content you want to deliver to students” (Kate_3.1_16:04).

Again, Kate justifies her infrequent use of technology by mentioning that tool can never replace the role of teachers, in that it is merely an aid instead of the key to successful instruction. Apparently, Kate gives little credit to computers in terms of how much impact it can bring to ELL teaching and learning. Therefore, Kate is apprehensive that overemphasizing the use of innovative tools will create a trap where people don’t know why they are using it. People will use it just because everyone is talking about it. The use of computer technology for instructional purpose will just become a slavish reaction to the current trend. Therefore, Kate would rather maintain the status quo of her limited use of technology for instructional purposes rather than turning the use of technology into a major focus of her instructions, especially considering the

issues of lack of time and heavy workload. Kate argues that:

“他本來教學可以達到很好的成效,她可能是教她的課,她可能不需要任何的一些電腦設備她就可以把學生教得很好,那現在去強迫她使用她不熟悉的東西,反而有反效果,那我覺得那不就過頭了嗎,那不就是有一點本末倒置,...所以我覺得如果要強迫e化的話,其實我並不是非常的認同啦” (Kate_2_53:24).

“Some teachers can have distinguishing results in their teaching without implementing technology in their instruction. If they are forced to use tools they are not familiar with, it might result in some counterproductive consequences. If that is the case, I would say it is putting the cart before the horse. So, I don't like the idea of e-learning if teachers will have to be forced to implement technology for instructional purposes” (Kate_2_53:24).

Here, Kate points out her disagreement with the top-down requirement of technology implementation. Kate strongly argues that promoting a misaligned policy is directing educators' focus and efforts on unnecessary and useless things. This assertion also reveals that Kate is more in favor of her current instructional strategy over technology implementation.

Second, in response to students' interests in computer technology, Kate justifies her limited use of computer technology for pedagogical purposes by claiming that the key to the success of instruction is the human instructors' guidance, not the tool. Kate also emphasizes that technology implementation is not the answer to the problems she encounters in her daily practice; instead, that the teacher is the key to successful instruction. Kate says:

“Q:那這跟learning motivation呢?你覺得有什麼關聯嗎

A:跟learning motivation有沒有相關,我覺得只要使用得當,可是我覺得媒體這種東西是死的,最主要還是看傳達者,引導者,還是要看老師她怎麼去使用,她如果用得不好,只是放給學生看什麼的,像電影,她如果只是放下去,其他時間她都不管的話,那學生或許看了會笑哈哈,可是看完後有沒有吸收到東西,我覺得還是要老師” (Kate_3.1_31:32).

“Q: Do you think technology implementation has something to do with learning motivation?

A: I think technology implementation has something to do with learning motivation as long as it is implemented properly. But I think tool is something dead, so the key is the knowledge transmitter and the guide. It really depends on how teachers use it. If the teacher doesn't use it appropriately, say, he or she just plays a movie to students without providing any follow-up activities or guidance, students will merely have a great time

and leave the classroom with nothing” (Kate_3.1_31:32).

Kate’s notion of the important role of teachers in successful instruction warrants her limited use of computer technology for instructional purposes. Given the situation that Kate has limited time, heavy workloads, and insufficient computer literacy, even with the idea in mind that technology implementation can be a possible approach to promote students’ learning motivation, Kate still has little interest in technology implementation.

Third, “irony” is used by Kate to downtone and to justify her limited use of computer technology for instructional purpose. She is ironic about the function of computer technology and states that it is more for the purpose of entertainment rather than for the purpose of learning. Students’ use of computer technology is not considered as serious learning. As Kate argues:

“我知道學生她們都會去學校上網,可是她們上網的話都不是在學習耶,哈,要嘛就是找資料,因為課業需求,要嘛就是上網看一些blog,或是聊天什麼的,她們其實反而真正用在學習上不多” (Kate_3.1_38:45).

“I know students will use the wireless school provides to surf the Internet. But, they are never doing it for learning. Ha! They sometimes surf the Internet for online information because it is a course requirement. Most of the time, they use Internet to read blog articles and online chatting. The actual use of Internet for the purpose of learning is limited” (Kate_3.1_38:45).

Kate is also ironic about students’ use of computers and the Internet in that students only use it for gaming. Kate says:

“Q:那你怎麼看那些,現在學生電腦能力都比老師強,她們可能私下接觸到電腦或是私下不管學習什麼東西,她們倚賴電腦科技的層面也很廣
A:是阿,她們就倚賴在電玩阿,哈” (Kate_3.2_05:08).

*“Q: What’s your opinion about the young generation’s use of computer technology? Students nowadays have a stronger computer skill than teachers. They rely on computer technology in several aspects, including learning things in their leisure time.
A: Yeah, right, they rely on computers for the purpose of gaming. Ha! ”
(Kate_3.2_05:08).*

Apparently, Kate does not relate the use of computers to serious learning. Kate’s sarcasm

reveals that she tends to relate computers to entertainment and does not believe that students will use computers for learning; therefore, she certainly can justify her limited use of computer technology in her instruction since computers have nothing to do with serious learning.

In addition to be sarcastic about what students use computers for, Kate is also sarcastic about the function of computer technology in that it only gives superficial credits to teachers without substantial benefits to ELL teaching and learning. Kate thinks that the use of computer technology only helps teachers to look more tech-savvy. It is just a way to fulfill personal vanity. Kate therefore, mentions that if it is not for personal need, such as producing PowerPoint slide show for her wedding, she has less interest in technology implementation for instructional purposes.

“我自己認為說,學生會覺得說這個老師不是只會純粹的教學,她會用一套,她的教材會比較多樣化,她不是只照著課本上,我覺得可能就是學生對老師的印象會覺得這個老師比較多元,然後我自己聽了會比較高興,哈,會比較有點虛榮心”(Kate_3.1_28:30).

“I think students will have a better impression of the teacher who uses computer technology for instructional purposes. They will consider this teacher as tech-savvy whose teaching materials and teaching strategy are more diverse because the teacher does not only rely on textbooks. If my students perceive me as tech-savvy, I will be thrilled. It’s all about vanity. Ha!” (Kate_3.1_28:30).

From the above examples, we find that “irony” can be considered as the strategy Kate used to downtone and to justify her infrequent use of computer technology when situated in an evaluative context.

Elaboration of Point #4

In terms of Kate’s action in response to the top down evaluative pressure, the findings from the field notes (taken from informal conversations on the hallway) show that technology is prioritized as low because technology implementation is just a small part of the evaluation. This low expectation of technology implementation among other evaluation criteria leads to Kate’s

limited and infrequent use of technology for instructional purposes. Kate's minimal compliance with the technology implementation requirement, therefore, indicates that there are other central concerns prioritized as more urgent than the issue of technology implementation in this particular context.

Kate's Major Themes and Emergent Findings

Contradictions

There are several contradictions found in Kate's notion of her educational belief. First of all, there are contradictions found in both of the interview data and the field notes on the classroom observation regarding Kate's notion of the importance of students' needs in her curriculum planning. Even though Kate claims that students' needs should be placed first, Kate's perception of the prevailing use of computer technology among the young generation, her notion of what determines a successful instruction, and her actual practice demonstrate that "teacher control" is a distinguishing feature in her instruction. As has been elaborated in the previous paragraph (Kate's action, point #3), when talking about the issue of technology implementation for the purpose of fostering students' learning motivation and matching their needs regarding learning style, Kate is sarcastic about students' interests in computers and the Internet. Kate perceives students' use of computer is merely for the purpose of entertainment (e.g., gaming) rather than for the purpose of learning. Therefore, Kate has a hesitant attitude toward technology implementation. Kate doesn't believe that computer technology can promote students' learning to a higher level.

In addition, Kate claims that she cares about students' engagement, involvement, and their real needs because she believes that students' learning achievement correlates with whether the curriculum design fits well with their real needs. As she says:

“我會重視的是學生的involvement,就是學生那邊的參與,對,我還是會注重學生真正的需要是什麼,對,然後,因為我覺得你學習要有成效,必須還是要做..跟他的需求有關啦,當你的教學是符合他的需求的時候,他基本上接收度就比較大” (Kate_1_01:23:18).

“What I care about the most is students’ involvement. I care about what students’ needs are. This is because I believe that in order to help students to learn effectively, teachers have to design curriculum that fits students’ real needs. In other words, when the course objective fits students’ needs, students’ acceptability of the course content will be higher” (Kate_1_01:23:18).

In the theory of ELL teaching and learning, “student-centeredness” is highly encouraged and recognized in lesson planning and classroom management. Therefore, Kate’s notion correlates with the ELL teaching and learning theory and demonstrates her adequate professional knowledge. However, from my on-site classroom observation and Kate’s notion of teachers’ role and responsibility is to transmit knowledge and resolve students’ puzzles, “teacher control” is a major feature in Kate’s instructional strategy. For example, Kate mentions that,

“因為其實我們在課堂上面會比較要傳達的是知識上面的東西,所以這種e化我覺得是對學生“課後”的幫助” (Kate_2_51:55).

“This is because I think the meaning of schooling is to transmit factual knowledge. Therefore, to me, e-learning is for students’ self-regulated learning “after” school” (Kate_2_51:55).

Kate also states her perception regarding what should be taught in order to facilitate students in acquiring a foreign language. She says:

“像在文法聽力跟文法寫作上面,她們可能會需要的就是這些基本的文法知識,英語的知識,聽說讀寫這些基本技巧,那所以重點的話我就會放在這個比較知識的傳達上面” (Kate_3.1_02:03).

“For instance, in listening comprehension and writing classes, students need to acquire the basic knowledge of grammatical rules. They need to learn the basic knowledge of four skills [listening, speaking, reading and writing] when learning a foreign language. So, I will highly emphasize on the transmission of the factual knowledge of a foreign language” (Kate_3.1_02:03).

Besides, from the field notes taken during the in-class observations, it is found that Kate’s classes are instructed in a teacher-centered, lecture-oriented, and non-reciprocal style. Even

though some of the class time is used for pair work, most of the class time is used by the instructor to deliver speeches and transmit knowledge while students sit and listen. There are interactions between the teacher and students, but it is in a linear pattern of question (teacher)-and-answer (students). Kate is always the person giving out questions about the course content and providing immediate responses to students' presentations. The questions asked are mostly about comprehension testing rather than fostering discussion for the purpose of developing critical thinking ability. For students' presentation, Kate also positions herself as an authority while students are not actively engaged in the learning process nor are encouraged to provide thoughts, comments, and questions for their peers.

Overall, Kate's assertions and her actual practice demonstrate that Kate still perceives the role of teacher as an authoritative figure in the classroom who determines what is to be learned and how it should be learned. Students' needs and interests are not necessarily put into consideration in her curriculum planning as she claims. The idea of student-centeredness is therefore a rule of thumb originating from the theory of ELL teaching and learning, rather than an actual instructional strategy implemented in Kate's practice.

Secondly, Kate questions the validity of testing in evaluating students' actual academic ability. Kate believes that the goal of learning should not be for the purpose of passing a standardized test but should be for the purpose of being able to apply what we have learned in school to a real life situation. As Kate argues:

“怕變成有時候強調過度,就變成大家又變成為了考試在學習,我覺得就是變成有一點強調過重了,就變成是為了準備考試考TOEIC而忘了其實比較重要的是尤其是在實質上的語言應用,我覺得有稍稍的過頭了,因為你通過檢定考不代表你真的...會考試並不代表說你真的能夠講得很好...我覺得這個成績好他有兩點,可能是她們會了,另外一種就是她教她們考試技巧,所以我覺得這個還有待商榷”(Kate_2_17:36).

“I am afraid that if we overemphasize the necessary of getting a language proficiency certificate, it will mislead students to believe that preparing for a standardized test (such

as TOEIC) is more important than language application in their daily life. This is because I believe that passing a standardized test doesn't mean you can adopt and apply the target language well. I have doubts about what the results of the standardized test can show us. It might indicate that students do acquire the target language. But, on the other hand, it might also merely indicate that students have a better skill in test-taking. So, the legitimacy of standardized test is really open to questions" (Kate_2_17:36).

However, Kate still encourages students to get language certificates for the purpose of being more competitive in the future job market. This is another example showing a contradiction between Kate's assertion of her educational beliefs and her actual practices. But it also demonstrates Kate's compliance to the top-down decision since helping students to get language proficiency certificates is highly encouraged by the school (for survival reason) and by the Ministry of Education (one of the examples of the misalignment of the MOE evaluation).

Thirdly, Kate criticizes the traditional teaching approach (e.g., the use of textbooks) while her lessons are primarily text-oriented and lecture-based. In the MOE evaluation process, teachers in this department accept the MOE committee members' suggestions to develop a centralized curriculum and select unified textbooks. The course objective is shifting to a direction of assisting students to improve their English proficiency by passing the standardized test and earning a language certificate. As Kate points out:

“因為評鑑他們會給我們一些建議,所以就變成我們就是要依照她們的建議去做修改我們的方向...課程目標,或是課程設計那邊需要做一些調整,然後再來很積極的部分就是...語言能力她們並不是很肯定,所以為了這部分,那我們學校就有給我們行成壓力,所以我們現在就是對學生的檢定考非常的積極,所以我們就是排多益課程阿,全民英檢,就是鼓勵她們要去考,就是一直在傳達這個訊息,你要去考多益,你要去考全民英檢,你要去考檢定考” (Kate_2_06:05).

“The MOE evaluation committee members will give us some suggestions and it turns out that we will have to adjust our directions based on their suggestions. It includes the educational objectives and curriculum design. Most importantly, students' language proficiency and performance are not acknowledged by the MOE evaluation committee members. So, in this particular aspect, teachers feel pressure from the school and are expected to encourage students to get language proficiency certificates. In order to achieve this goal, we'll have to offer courses related to TOEIC and GEPT. We also have to pass on the information of these types of standardized test and keep reminding students

to take the test” (Kate_2_06:05).

Obviously, for the purpose of passing the MOE evaluation, teachers’ curriculum design still focuses on text-oriented work and standardized testing. This example also demonstrates the contradiction between Kate’s educational belief and her actual practice.

Fourth, Kate emphasizes the importance of professional development and expects herself to reach an esteemed professional image while at the same time, she has an attitude of passing the buck in response to the issue of students’ low learning motivation and the issue of technology implementation. Kate’s notion of her educational philosophy demonstrates that Kate is trying to bring in the theory of ELL teaching and learning (such as the idea of student-centered teaching) in order to show her professional competence. However, while the theory of ELL teaching and learning cannot solve the problems she encounters in her daily practice, she lays the responsibility on students. Kate asserts that students’ learning achievements have a strong correlation with students’ intrinsic learning motivation and attitude. Students’ learning outcomes have nothing to do with how a teacher instructs the class. So, technology implementation can do little about it. As Kate asserts:

“你如果說你想要的結果,就是學生要有成效出來,可是問題是學生的學習成效並不是那麼好,有時候我覺得那跟科技是沒有關係的,那是學習動機跟態度,motivation & attitude” (Kate_3.1_19:10).

“Sometimes, students’ poor academic achievement correlates with their learning motivation and attitude. Technology implementation can do nothing about it” (Kate_3.1_19:10).

Since Kate believes that students’ learning motivation has nothing to do with teachers’ instructional strategies and it is about students’ self-efficacy, Kate is actually trying to pass the buck to students. Therefore, students’ low learning motivation causes Kate’s low expectations and a “having no choice and then give-up” attitude toward her students.

In addition, Kate mentions that it is essential to learn the current trends of ELL teaching and learning approaches. This notion reveals her perception of the professional image of ELL teachers as being innovative and well-informed. However, she has a procrastinating attitude towards getting to know more about technology implementation. All of the above examples demonstrate that Kate justifies her infrequent use of computer technology for instructional purposes by passing the buck to students and to the poor design of the innovative tools. These are also great examples showing the contradictions between Kate's notion of her educational philosophy and her actual practice.

Finally, when talking about attending a professional training program, it is mostly about what she "wishes" she can do in the future rather than what she is currently going through. According to Kate, a major reason is related to the time conflict between attending the workshops and fulfilling her duties in school. As she points out:

“現在這一兩年會有教師成長營這一類的活動,可是我是說有時候是時間上不能配合,比如說她這次剛好都開在禮拜四禮拜五,那剛好我們都有課阿,因為你要請公假,問題是你有時候請假又要跟學生調時間來補課什麼的,其實也蠻麻煩的,而且這樣也影響到教學進度,所以我都盡量避免” (Kate_1_15:24).

“There are some professional training programs for teachers in these few years. But sometimes I cannot attend the workshops because of time conflicts. For instance, if the workshops are on Thursday and Friday, I cannot attend it because I have courses to instruct. If I take a week off for attending the workshops, I will have to find some other time to make up the missed class. It will become a real problem to me and it will also mess up the planned schedule. So, I always try to avoid that” (Kate_1_15:24).

The lack of time appears to be an appealing feature that Kate uses as a vehicle to justify her absence from the professional development training program. This also reflects that the MOE evaluation is an ideal system that neglects the reality in that heavy workload usually leads to a decline in quality. Professional development is favorable among faculty; however, when teachers are burdened with overwhelming duties, attending professional training workshops becomes

impossible.

All of the contradictions mentioned above might suggest teachers' disempowerment in the evaluative process and the pressure of passing the evaluation causes them to compromise when there is a belief conflict between policymakers/administrators and teachers. Under the pressure of being judged and evaluated, Kate has to find reasons to justify her teaching practice; which does not correspond to the framework of the image of a competent teacher listed in the evaluation criteria. If teachers, in a position to give true reflections of the challenges in their daily practice and what's happening in the classroom, are not provided with a safe space for reflecting and expressing their opinions, but are simply asked to follow the policy, the policy being enforced is actually killing the education quality.

In addition to the contradictions mentioned above, Kate also complains about the insufficiencies in the equipment, technical support, personnel, and training offered to teachers and students in her school. However, at the same time, when Kate is asked about what facility the school should purchase so that teachers are more willing to implement computer technology in their instruction, Kate states that the equipment school provides is good enough and fits her needs. She says:

“我會用的也有限,就是那些東西就夠了,其實器材是夠我用了,只不過我還是使用上面還不是那麼的熟悉,就是對操作上面不熟” (Kate_2_37:40).

“The fact is that I have limited use of the facility so that what the school offers to us is pretty good enough for me. But honestly, I am not familiar with the functions of the equipment and I don't know how to use them” (Kate_2_37:40).

Kate further justifies her limited use of technology by relating it to her limited knowledge of technology implementation and computer literacy:

“假如說我覺得我懂的話,科技這方面的東西的話,或許我可能需求就會更大” (Kate_2_38:14).

“If I know more about computer technology, maybe I’ll have a need for more software and hardware” (Kate_2_38:14).

This kind of contradiction can explain two things. On one hand, Kate is recruiting technology as a vehicle for complaint. While Kate’s school is financially and structurally in trouble, teachers were disempowered in several ways. Recruiting technology as a vehicle for complaint is the way teachers reveal their anger and fight against the inequality they encountered in this context at a micro level (within the school context) and a macro level (the evaluation system at large). On the other hand, Kate is declaring her own autonomy and right to determine her own instructional strategy when in reality, she is situated in an evaluative context where her voices are purposively neglected. Regardless of her actual use of technology for instructional purpose, Kate is requesting “technology in waiting” so that she will have the freedom to choose the tools to assist her teaching without worrying about the issue of lack of equipment. “Technology in waiting” therefore, becomes a way to represent teachers’ request for a change and reform in this particular school context.

In short, all of these contradictions between Kate’s educational beliefs and her actual practice indicates that when teachers are disempowered and situated in an evaluative pressure, their true voices cannot be heard and they will have to compromise for survival purpose. Teachers are forced to be compliant to the policy and to do things that they believe will fundamentally undermine students’ benefits and the whole education system. They also have to find excuses or get around the loophole for not meeting the standard in order to avoid punishment and critical judgment. In this case, the original purpose of the evaluation is to ensure a high quality of education, but, eventually, the misalignment of the evaluation will result in a fact that it is planting the seeds of its own destruction.

Irony

While technology implementation is highly encouraged and is evaluated in the educational context in Taiwan, Kate uses “irony” to display her disfavor of technology implementation. Regardless of Kate’s perceptions of how much technology can bring to ELL teaching and learning, Kate knows that it is currently an innovative and well-known instructional strategy promoted by policymakers and administrators. Kate is also aware that teachers are expected to implement technology for instructional purposes. She mentions her capability of being aware of the trend in ELL teaching and learning in order to demonstrate her professional competence. However, this expectation does not match Kate’s perception of technology implementation. Therefore, “irony” is used by Kate as a vehicle to justify and downtone her limited use of computer technology in her instructions. For instance, Kate mentions that one of the advantages of implementing technology is to get more positive comments from students because using technology in instructions helps teachers to look more professional and tech-savvy. Having positive comments from students can fulfill her vanity but does not have substantial benefits to students. As she says:

“Q:那你覺得科技對你的教學,有什麼影響?

A:我自己認為說,學生會覺得說這個老師不是只會純粹的教學,她會用一套,她的教材會比較多樣化,她不是只照著課本上,我覺得可能就是學生對老師的印象會覺得這個老師比較多元,然後我自己聽了會比較高興,哈,會比較有點虛榮心” (Kate_3.1_28:30).

“Q: How does technology implementation impact your teaching?

A: I think students will have a better impression on the teacher who uses computer technology for instructional purpose. They will consider this teacher as a tech-savvy teacher whose teaching materials and teaching strategy are more diverse because the teacher does not only rely on textbooks. If my students perceive me as a tech-savvy teacher, I will be thrilled. It’s all about vanity, that’s all. Ha!” (Kate_3.1_28:30).

Apparently, there is an irony embedded in Kate’s description of how computer technology impact ELL teaching and learning. From the above description, technology

implementation is, therefore, just used by Kate as a way to present an outward fidelity to the policy and a way to win the allegiance of the students. Kate does not perceive it as a way to have an effected radical change in ELL teaching and learning.

Another example of “irony” is Kate’s notion of her cosmetic compliance to the policy of technology implementation. Kate asserts that the idea of acquiring more advanced computer skills for pedagogical purpose is not out of her personal interests and needs. Instead, it is driven by the force of the conception of professional development, which is valued by the practice community. As Kate points out:

“A:對我來說我會去學它是因為對工作上面有幫助,而不是因為個人的興趣,這樣講好了

Q:怎麼說

A:學習這些東西不是我個人的興趣,我會去學是因為它對我工作會有加分,就是說我的教學上它會有加分,可是它不是因為我對它有興趣,不是因為出自於個人動機,而是因為工作動機我才去學習” (Kate_3.1_26:00).

“A: To me, acquiring more advanced computer skills is not out of my personal interests. It is for the purpose of professional development because it can be a plus to my teaching career.

Q: How so?

A: I don’t have intrinsic motivation to acquire a more advanced computer skill. I learn it just because it helps me to look good in my teaching career. I am personally not interested in computer technology. Acquiring a more advanced computer skill is not out of my own desire; it is for the purpose of having a better performance in my teaching” (Kate_3.1_26:00).

Talking about this idea is also a way to show her professional competence. However, Kate currently does not have a strong desire to learn advanced computer skills because her current computer literacy can already allow her to achieve the purpose of cosmetic compliance. Kate further mentions that will she have the desire to learn computer skills only when she needs it for personal use (e.g., learn the advanced function for PowerPoint production for having a photo slide show in her wedding) rather than for pedagogical purposes. This assertion is stated by Kate with a sarcastic tone. As she says:

“比如說我今天要自己製作一個東西的時候,比如說我今天要結婚了,然後我想要製作一個自己的東西的時候,我就會,哈,因為有一些個人的需求,呵..那如果你問我說我本身是不是對這個很有興趣,沒有” (Kate_3.1_27:48).

“I’ll have interests in learning more advanced computer skills only if I have a need for personal use. For example, if I am getting married and I need to produce a photo slide show, I will try to learn it. It is because I have a need for personal use. Ha! But if you ask me whether I have a strong interest in technology, my answer is “No””
(Kate_3.1_27:48).

Kate’s statement clearly demonstrates that she does not appreciate the promotion of technology implementation. By way of demonstrating an ironic attitude, Kate is very honest about her disagreement with the top down policy of technology implementation.

Finally, Kate justifies her limited use of technology for instructional purpose by pointing that technology implementation cannot have ultimate benefits to ELL teaching because Kate considers it is best used for students’ self-directed learning after class. However, as previously mentioned, Kate ironically claims that students’ use of computer technology is mostly for leisure purpose and social interaction rather than for the purpose of learning. Kate mentions that:

“我知道學生她們都會去學校上網,可是她們上網的話都不是在學習耶,哈,要嘛就是找資料,因為課業需求,要嘛就是上網看一些blog,或是聊天什麼的,她們其實反而真正用在學習上不多” (Kate_3.1_38:45).

“I know students will use the wireless school provides to surf the Internet. But, they are never doing it for learning. Ha! They sometimes surf the Internet for online information because it is a course requirement. Most of the time, they use Internet to read blog articles and online chatting. The actual use of Internet for the purpose of learning is limited” (Kate_3.1_38:45).

Gaming, blogging, and having social activities online (e.g., meeting people and making new friends) are the most prevalent leisure activities among the young generation. However, from the above description, we know that Kate perceives these activities have nothing to do with learning and she has a strong ironic attitude toward this phenomenon. Therefore, when technology implementation becomes a top-down requirement, Kate perceives it as an

encouragement towards entertaining students rather than fostering serious learning. Apparently, to justify her limited use of computer technology in her instruction, Kate uses irony to demonstrate her disagreement with students' use of computers and the Internet.

Passing the buck

Another phenomenon that occurred regarding the actions the school and teachers take in response to the misaligned evaluation system is passing the buck. First, due to the lack of funds for hiring sufficient personnel, the school has to lay the administrative duty of recruiting students onto teachers without providing teachers with sufficient assistance and support. Kate points out that:

“A:那可是這樣招生壓力就會變成我們要去做宣傳,我們系上要承擔這種招生壓力了
Q:所以相對就是老師的工作
A:又變重了”(Kate_1_20:48~22:04).

*“A: It turns out that teachers will have to take care of the duty of student recruitment. We have to conduct propaganda and we also have to be responsible to the results.
Q: which means teachers' workload...
A: becomes heavier” (Kate_1_20:48~22:04).*

The duty of student recruitment overwhelms teachers who already are burdened with heavy workload of teaching, academic research and service. In addition, in order to show a solid report to the evaluation committee members, the number of approved grant proposals and the number of co-op cases collaborated with the local industry are one of the major focuses of the school during the MOE evaluation process. The school simply has a top-down request and passes the buck to teachers without supporting them with professional training. As Kate complains:

“我們是花在教學上的心力比較多,而且你說像建教合作這種東西,不是我們的拿手”(Kate_1_01:35).

“We devote most of our time and effort on teaching. As to conducting co-op cases with the local industry, it is not something we are good at” (Kate_1_01:35).

Apparently, teachers are more willing to devote their time and effort on teaching instead

of administrative duties. Teachers perceive administrative duties as a burden because it is something they are not trained to do in their professional training program. Kate feels disempowered when she is forced to fulfill administrative duty that is out of her specialty. As Kate states, these top-down administrative requirements are unfair to teachers, especially when the school uses the result as a means to reward and to punish teachers. Kate complains that:

“當然我知道我們老師需要配合,這我贊成,當然這個系的特點學校可能不是那麼清楚,所以我們老師去配合,我覺得這是可以理解的,那問題是說,如果你今天要把業績壓力放到我們身上的話,我就覺得有點不公平”(Kate_1_26:20).

“Of course I know we have to comply with this top-down request (of fulfilling the administrative duty of student recruitment). I can accept this. This is because the school might not know so well about the distinguishing features of the Applied English Department as we do. So, I can understand why the school needs teachers’ help in the process of student recruitment. But the problem is that if you want us to take full responsibility of the achievement, it is really unfair” (Kate_1_26:20).

This unfair, top-down policy further indicates that Kate has to spend extra time learning something irrelevant to her specialty all on her own while she has had to face the issues of the lack of time and heavy workload. This extra burden shifts teachers’ attention to focus on things that might not immediately solve the problems teachers encounter in their daily practice and might not fundamentally change the school into a better education environment. This brings up another issue that if the most urgent pedagogical issues remained unresolved (such as students’ low learning motivation) and new administrative duties are passing on to teachers, who can actually benefit from the evaluation system?

Second, in dealing with challenges in her daily practice, Kate feels frustrated by students’ low learning motivation and students’ strong desire of transferring to other schools. Students’ negative attitude toward learning and their resentment against the school even cause teachers’ helpless mindset and an attitude of “passing the buck.” In other words, when Kate is discouraged by students’ low learning motivation and loses her autonomy in determining the curriculum, her

instructional strategy and grading, passing the buck is the action she takes in response to the disempowered situation. The evidence of passing the buck can be found from Kate's previous declaration. Kate mentions that it is students' responsibility to be self-motivated. She doesn't think that teachers can do much about this no matter how hard they try. As Kate says:

“你如果說你想要的結果,就是學生要有成效出來,可是問題是學生的學習成效並不是那麼好,有時候我覺得那跟科技是沒有關係的,那是學習動機跟態度,motivation & attitude” (Kate_3.1_19:10).

“Sometimes, students' poor academic achievement correlates with their learning motivation and attitude. Technology implementation can do nothing about it” (Kate_3.1_19:10).

Apparently, Kate justifies her limited use of computer technology by passing the buck to students and the tool.

Third, another example of the idea of “passing the buck” is that Kate has an accusing attitude toward students' lack of self-efficacy. Instead of having a desire to help students deal with this issue, Kate prefers to hand it over to someone else. Kate even asserts that it might be easier for her if she can hand the problem (students with motivation problem and an issue of the lack of *esprit de corps*) to teachers in other schools. Kate complains that:

“有一些學生,可是有一些學生真的是,唉,轉了也好啦,被二一掉的啦,我們學校是雙二一,就是,他其實就是根本不來唸書,就是那種..唉,轉轉轉,就讓別的學校去處理你的問題吧,哈” (Kate_1_01:04:18).

“Some students are really, sigh. It might be a good thing if they can transfer to other school. Those who fail and incline to drop out do not have a strong learning motivation. They are not here for learning anyway. Those students, sigh. Just leave. It would be good to hand their problems to other schools. Ha!” (Kate_1_01:04:18).

The above assertion can clearly demonstrates Kate's frustration of students' low interests in learning and her attitude of “passing the buck.” Kate further complains that even if the school and teachers provide a high quality educational environment for their students, students will not appreciate it and will not have the desire and ability to learn like students in a prestigious

university. This reinforces Kate's idea that if those students can transfer to other school, it can save her lots of troubles and energy. As Kate complains:

“我把你當成台大生來教,問題是你吸收得了嗎?她們享受的是台大學生有的權利,比如說她們有很多的club,其實這是跟學習上面沒有太多相關的東西,好,我們那個自學中心給他了,他會來使用那些設備嗎?不見得吧,他都不來學校了,你想學校的東西他會想運用?圖書館裡面一堆書他有去看嗎?不去看阿,他說裡面的書他都不想去看,他想看的是哪些書,跟學習上面一點關係都沒有的書阿” (Kate_1_01:19:04).

“Do you really think my students can acquire the knowledge I teach if I treated them as students in Taiwan University? They have the same rights and interests as students in Taiwan University do. For example, they have several clubs but that is something irrelevant to learning. Another example is that we offer them a self-regulated language lab, but do they actually come and use the facility? Not necessarily. They don't even come to school. In this case, do you really think they will use the facility? There are a great collection of books in the library. Do they ever check them out and read? No, never. They said they are not interested in the books the school collects. What kinds of books are they interested in? They are interested in books irrelevant to learning”
(Kate_1_01:19:04).

The above assertion shows that students' low learning motivation causes teachers' low expectation and low motivation for teaching. It also explains why Kate is so frustrated that she has a strong desire of handing over the “hot potato” to other teachers.

Case #2: Chen

Introduction to the Case

Chen is a male ELL teacher in his 40's who is interested in film editing and golf for his leisure time. Chen earned his doctoral degree in the field of Literature Theory in Taiwan. Chen is currently an assistant professor and he has been working at the same school for 14 years.

The courses Chen offers are Introduction to English Literature, English Composition, Translation, and Listening Comprehension. The Listening Comprehension class is conducted in a language lab where each individual student has his/her own computer. There are around 50 seats in one language lab. The desks are fixed and all seats are not facing the front.

In the listening class, Chen's instruction relies mostly on computer technology with which students watch video clips for 30 minutes and do the comprehension exercises on the screen for the first session of the class time. The comprehension exercises are presented in both filling-the-blank and multiple choices formats. The items are designed based on the dialogues and scenarios in the video clips and are used to examine students' listening comprehension ability. The whole class will discuss the answers together and extra credits will be given to those who voluntarily participate in the discussion. In the second session of the class time, students will do the TOEFL, TOEIC, and GEPT practice tests on the screen. Again, the whole class will discuss the answers and students will be rewarded with extra credits if they participate in the discussion. This pattern of interaction repeatedly appears in every listening class Chen instructs. During the whole class, Chen remains seated behind the computer and constantly looks at the computer screen while explaining grammatical usage. No pre and post exercises are given to guide students towards an in-depth understanding of the content. In other words, except for watching the clips, listening to the dialogues, doing the test items, and checking the answers, there is no activity aiming at promoting discussion or developing students' higher-order thinking abilities.

In Chen's other classes (e.g., Introduction to English Literature, English Composition, and Translation), the instructional strategy is lecture-based, in which the teacher stands behind the lectern podium, looks at his notes, and gives lectures. Toward the end of the class, Chen will ask comprehension questions about the text and extra credits will be given to students who answer the questions correctly.

One of Chen's central concerns regarding ELL teaching and learning is the rate of students' attendance, students' low learning motivation, and large class size. Students nowadays

are no longer interested in schooling; therefore, teachers have to put efforts on promoting students' interest in learning. The action Chen takes in response to students' low learning motivation involves lowering expectation, appropriate material selection, technology implementation and an approach of "carrot-and-stick." Chen lowers his expectation on how much students can learn and his expectation is limited to the acquisition of basic language skills and interest in learning. To create a dynamic and interactive learning environment and to help students enjoy the learning process, Chen selects various interesting and easy-to-understand materials so they can overcome the challenge of retaining students' attention and the issue of low attendance rates. Besides, Chen integrates multimedia learning materials (e.g., film) to motivate students because it makes learning fun. Chen's assertion of the reason why film is used as the major teaching resource implies that "fun" can be a powerful ingredient to a change of behavior. Finally, Chen gives rewards to students who voluntarily engage in the in-class activities. On the other hand, in dealing with the issue of students' low attendance rate, Chen's management approach involves a feature of "teacher control" that involves roll call and punishment (e.g. deduction of the final grade) for those who skip classes.

Large class size is a common issue that many Taiwanese teachers encounter in their teaching career. As Chen mentions, instructing a large class inhibits teachers from providing individual assistance and sufficient guidance to students. Large class size also impacts Chen's evaluation method. In Chen's classes, test-based evaluation is often enforced for the purpose of efficiency. Having a large class, the written exam in the format of multiple choice and short answers is the most time-saving and efficient way for teachers to monitor students' understanding of the text. A more time-consuming evaluation approach such as essays, presentations, and portfolios that focus more on the development of critical thinking ability,

collaborative learning or the learning progress will usually be discarded.

Context

The school Chen works for is located in a suburban area in southern Taiwan where resources are usually considered less sufficient. However, this school is located near a “technology industrial park” where they can easily connect and cooperate with the local industry. In order to earn a prestigious academic reputation and to recruit more students, this school endeavors to provide high-end facility to ensure students a tech-rich learning environment. In addition, to maintain the quality of education, this school also has a rigorous evaluation system of teachers’ practice, research, and service. Teachers might get penalized for not being able to pass the evaluation.

This school was originally established as a Junior College (under the Technological and Vocational Education System) but was upgraded to a College of Technology. Within 3 years, it was again upgraded to a University of Technology because of their outstanding academic and technological achievement. It then became one of the most prestigious universities of technology in Taiwan. This school passed the MOE evaluation and was also funded by the government with the “Teaching Excellence Project” grant to advance students’ English proficiency, to provide a tech-rich learning environment, to prepare students for the competition in the global market and to guarantee an excellent teaching quality.

This school emphasizes English proficiency and technology implementation where technology enhanced learning is highlighted. The school provides students with campus-wide wireless access and high-end facility where instructions are able to be delivered in language lab. In the Department of Applied English, teachers are encouraged to deliver instructions in English. Students have to pass standardized test to demonstrate their English proficiency before

graduation. Courses related to the preparation of the language proficiency exams (e.g., TOEFL, TOEIC, and GEPT) are offered to students. To enable students to compete successfully on the job market, the school encourages students to obtain certificates in various domains, including foreign languages and computer skills.

In this school, sufficient technical support is provided and workshops regarding the introduction to computer software are constantly offered to teachers for the purpose of professional development. In addition, this school provides a tech-rich learning environment in which computer labs, a multimedia language center, and a self-access foreign language learning center are accessible to both teachers and students. Personnel are provided to maintain the equipment. Hardware and software is upgraded every five years.

To meet the basic requirement of technology implementation for the MOE evaluation, teaching materials and teachers' profiles are requested to be uploaded to the website for students to download. The school also creates an online discussion board to increase interaction among teachers and students and to ensure the resources being easily shared via the Internet.

Beliefs

Chen's Perceptions of CALL Implementation (RQ1)

Research Question 1:

What are ELL teachers' perceptions of technology implementation for instructional purposes?

The analysis indicates that four items summarize Chen's perceptions of technology implementation for instructional purposes.

1. Chen believes that technology can improve students' attendance rates.
2. Chen believes that technology can promote students' motivation to learn.
3. Chen believes that technology is a facilitator for teachers' instruction.
4. Chen believes that technology should not be overemphasized.

Elaboration of Point #1

Chen perceives computer technology as an effective tool to entertain students and to

improve student attendance rates. Chen reveals that one major concern he has regarding ELL teaching and learning is students' low attendance rates. According to Chen, schooling can no longer attract students because students nowadays are more interested in extracurricular activities and earning allowance by having part-time jobs. Chen believes that technology implementation can have a positive impact on the classroom dynamic and can make the learning process more interesting. In other words, it can successfully create an engaging and lively learning environment to bring ELL learners. Chen points out that:

“我是很注重態度跟出席率啦,所以這一點是我想要去掌握它,所以當然利用多媒體或科技,在這方面是還蠻有幫助的,跟以前上聽力課比起來的話,一開始完全上課本的話,那種效果,那種興趣,那種態度是有明顯的改善”(Chen_2_45:30).

“I am very concerned about students' attitude and attendance rate. I want to make sure that I have these two aspects in hand. I figure that the use of multimedia or computer technology is very helpful. Compared to my listening classes years ago in which textbook is the only teaching resource I used, there is a tremendous improvement in the classroom dynamic, students' attitude and motivation when technology is used” (Chen_2_45:30).

Apparently, Chen believes that once learning becomes interesting, students are certainly more willing to attend classes. Therefore, to solve the issue of low student attendance rates, technology implementation (e.g., with the use of films as the major teaching resource) is used to bring students back to the classroom.

Elaboration of Point #2

Chen perceives computer technology as an effective way to promote students' interests in learning. Students' low learning motivation has been one of Chen's major concerns in his daily practice. Chen points out that many students nowadays consider gaining a diploma as merely a requirement for the future job hunt as well as for the purpose of meeting the expectations of their parents. If students lack an intrinsic motivation to learn, it becomes more challenging for teachers to engage students in the learning process. With his experiences with technology

implementation, Chen perceives computer technology as an effective and powerful tool to make learning more interesting. As Chen states, creating an enjoyable learning environment is not an easy job unless computer technology is used. Chen says:

“教學或是學生學習都很快樂的那種情境是不容易弄的...但是科技教材就很容易達到.... 很容易產生那種快樂的氣氛,這是我科技教材得到的啟發啦”(Chen_2_25:15).

“It’s not easy to create an enjoyable context for both the teacher and students. But with the use of computer technology, it becomes much easier to reach this goal. What I’ve learned from my experiences with computer technology for instructional purpose is that it can easily create a delighted learning atmosphere” (Chen_2_25:15).

Chen perceives the use of the visual function computer technology provides as a breakthrough in the field of ELL because learning is not limited to text (e.g., the use of textbooks) anymore. As Chen mention, technology implementation successfully changes the classroom dynamic and provides students with a vision that learning can be fun, too. Most important of all, the use of computer technology in instruction not only can provide students with a more enjoyable experience in learning, but also can make teachers enjoy the process of teaching. Therefore, Chen gives many credits to computer technology in terms of ELL teaching and learning. Chen mentions that:

“就是說讓我覺得其實教學呢可以讓自己有興趣,然後學生有興趣,還是著重在興趣方面啦,就是說科技的東西真的可以,跟一般的教材比起來,那種引起興趣的程度會差很多,讓我體會到其實上課其實也可以很,讓自己上得很快樂,然後學生很快樂,這樣子,這是我的體會啦”(Chen_2_24:16).

“Technology implementation makes me feel that teaching can be fun and students can also enjoy the learning process. It’s more about “interest.” Comparing with other learning materials, the use of computer technology has a significant effectiveness on promoting students’ interests in learning. With the use of computer technology, I feel that I can enjoy my own class and students can have fun, too. This is what I learned from my experiences with technology implementation for instructional purpose” (Chen_2_24:16).

From Chen’s positive experiences with technology implementation, we can see how computer technology impacts ELL teaching and learning. It is Chen’s positive experiences with

technology implementation that enables him to foresee the possibility of a change of the classroom dynamic.

Elaboration of Point #3

Chen perceives computer technology as a facilitator to assist teachers in the preparation of teaching materials and their classroom instructions. First of all, the use of textbooks can no longer meet the needs of the students because text-based material is inflexible and dull. In response to this need, Chen endeavors to develop interactive learning materials in order to promote students' interest in learning. Given the fact that the capacity of computer technology allows teachers to easily modify the existing learning materials to be more refined, enjoyable, and individualized that fit students' needs and language proficiency level, Chen perceives computer technology as a powerful facilitator in assisting teachers in material preparation. As Chen mentions:

“因為這樣子當教材不錯.... 如果用剪輯的話,把好玩的都集中在一起的話,可能學生會覺得.... 會更有興趣” (Chen_1_25:36).

“I think using film as the learning materials is a good idea. If we can make good use of the editing function, we can combine all the interesting materials together. Then, students will feel that learning is more interesting” (Chen_1_25:36).

Apparently, with the help of computer technology, teachers can have more control over the materials they use. Teachers are able to easily create more appropriate and individualized materials that interest students so that learning can be fun.

Second, Chen perceives computer technology as a facilitator to assist teachers' instruction. While a traditional cassette tape recorder was widely used in traditional listening comprehension classes in the past, it has several limitations that prevent teachers from instructing the class in an efficient way. However, the capacity of computer technology allows teachers to rewind, fast-forward, pause, and repeat a piece of dialogue easily. Nowadays, many technical

devices are designed to be “user-friendly”. For that reason, with the use of computer technology, instruction can be done in a more efficient and effective way. As Chen points out, it is this capacity of computer technology that makes him adopt this innovative instructional strategy.

“Q:那為什麼您沒有想過說就維持以往的那些傳統的模式就好

A:因為如果是就聽力而言,我覺得聽力要用到電腦的話它的好處很多啦,就是說你可以用一些比較這個活潑有趣多媒體的教材阿,對,而且你,比如說你在播放上,你可以隨意控制,你說以前的錄音帶你要隨意控制它,在某個地方停下來,要重複,不容易,但是電腦相當容易

Q:可以看那個軌道

A:對,你要從幾秒開始,從幾秒一直重複,那很容易” (Chen_1_26:08).

“Q: Why don’t you just continue using the traditional teaching strategy for your listening class?”

A: I think for a listening class, there are a lot of benefits coming along with the use of computer technology. In other words, the class will become livelier when multimedia learning materials are employed. In addition, if I want to play the dialogues in a digital file, I can easily control the machine. In the past, it’s not so easy to pause and repeat the dialogues with the use of tape recorder. Now, I can do it easily with computers.

Q: You can check the trajectory of the dialogues from the computer.

A: Yes. You can just pay attention to the time shown on the bottom of the clip and then rewind the clip back there. It makes it so much easier for me to handle the machine” (Chen_1_26:08).

From Chen’s description above, we can find that computer technology brings a new level of interaction to the user and it also makes a breakthrough in the limitations that we found in the previous innovative tools. Chen is able to see the difference and how computer technology can facilitate his instruction so that he becomes a frequent user of computer technology for instructional purposes.

Elaboration of Point #4

Being a frequent user of computer technology for instructional purposes, Chen claims that technology implementation should not be overemphasized when it is a top-down decision. In response to the MOE evaluation regarding technology implementation, the school requires teachers to upload their teaching materials online as proof to demonstrate to the MOE evaluation

committee members that technology implementation has been carried out. However, the actual use of computer technology for pedagogical purposes has never been of a focus in the evaluation process. As Chen points out:

“po上網大家也都是應付一下...他沒有規定老師每個禮拜一定要怎樣,他是規定你一定至少要有有一些教材在上面,這樣而已” (Chen_1_35:32).

“Everyone has a perfunctory attitude toward the requirement of posting materials online...the school doesn't really have a detailed regulation of what teachers should do each week. We are just asked to at least post something online. That's all”
(Chen_1_35:32).

Since the actual use of computer technology is never of the major concern of the MOE evaluation, technology implementation often becomes an act of cosmetic compliance to the top-down policy because attention usually goes to more urgent issues. To Chen, who is technology literate and has been implementing computer technology in his instruction for several years, fulfilling this minimal requirement does not interfere with his current teaching method and is not an issue so far. However, situated in an evaluative context, Chen believes that technology-enhanced learning should not be overemphasized because computer technology is not necessarily suitable for every course. If technology implementation could be overemphasized, teachers might be forced to use it in every class.

“e化我覺得它的,它就適可而止啦,就是說它有它好的一面,但是不一定要所有的東西都e化” (Chen_1_38:26).

“I think the promotion of technology-enhanced learning should stop before going too far. There are certainly some advantages regarding e-learning, but it's not that everything should go that way” (Chen_1_38:26).

The above statement reveals Chen's concern about the promotion of technology implementation in that teachers' autonomy, in terms of instructional strategy, might be deprived. Even though Chen affirms the potential advantages of technology implementation, he believes that technology implementation can be overdone.

Chen's Central Concerns Regarding CALL Implementation (RQ2)

Research Question 2:

What are ELL teachers' central concerns regarding technology implementation for instructional purposes?

The analysis indicates that four items summarize Chen's central concerns regarding technology implementation for instructional purposes.

1. More time commitment.
2. Students' off task.
3. Dehumanization.
4. Technology is not a panacea (it doesn't work well with every course).

Elaboration of Point #1

With his experience of technology implementation, Chen mentions four central concerns he has regarding the use of computer technology for instructional purposes.

First of all, comparing with text-based instruction (e.g., purely relying on textbooks), technology implementation requires more time commitment in terms of setting up equipment, fixing technical problems, preparing teaching materials, and planning the curriculum. Chen explains that instructing a class in a language lab usually requires teachers to set up the machine in advance. Besides, technical devices are not always reliable. Chen says:

“因為那個有時候那種東西一弄就花蠻長的時間,你還要操作,那個你還要去操作,因為有時候機器不一定隨時都ok的,因為每一台每一個教室的狀況都不太一樣,機器不是隨時都ok,而且那個花的時間比較長” (Chen_2_17:13).

“Sometime it takes a lot of time to set up and operate the machine. There is no guarantee that the machine is always stable and working well. Each machine in different language labs is in different condition. The machine is not always in a good condition. So, it takes time” (Chen_2_17:13).

When technical problems occur, it also takes time to resolve the problems. Instructors usually feel interrupted when the planned lessons cannot be delivered due to the breakdown of the machines. Finally, as Chen claims, comparing the time investment between the use of textbooks and technology-enhanced learning materials, the use of computer technology is more

time-consuming. Chen points out that:

“如果用那種科技的教材,備課的時間會增長,會增長”(Chen_2_23:26).

“If teachers want to implement computer technology in their instruction, they will have to spend more time on course preparation” (Chen_2_23:26).

Chen further elaborates why it is more time-consuming with the use of technology-enhanced learning materials for ELL teaching and learning in school contexts. Chen explains that:

“A:困難或是問題..就是說你自己如果是使用科技的話,你自己相對你要對教材的那種,課的進行的方式,還有你對於那種教材的那種編輯,可能要多下一點功夫,你如果用課本,就照課本,課本它,比如說聽力課把它編得好好的,這裡該做比如說口語的練習,這裡該做聽力的練習,都有,但是你如果選那種教材,你自己要多花一些心思去想說課程要怎麼進行

Q:才會比較順暢這樣子

A:對,才會比較順,對,這就是它的問題,就是你自己要額外多花一些心思去編輯這些科技的教材”(Chen_2_21:00).

“A: When I incorporate computer technology in my instruction, the challenge I have is that I need to make more efforts on the material development, the design of the instructions, and the editing of the materials. But if I purely rely on textbooks, I can just follow the exercises in the textbooks. Take a listening comprehension textbook as an example, it will probably have an oral conversation practice first, and then follow with a listening comprehension exercise. You can just use the exercise and follow the arrangement. But if you want to use a multimedia-based learning material, you’ll have to spend extra time figuring out how to instruct the class

Q: So that the instruction will go smoothly?

A: Yes. To make sure it will go smoothly. But the problem is that you’ll have to spend extra time and efforts to edit the technology-enhanced learning materials” (Chen_2_21:00).

Apparently, Chen’s experience with technology implementation makes him believe that with the use of textbooks, instructors can simply follow the designed activities without having to spend so much time and efforts on lesson planning. However, with the use of multimedia-based learning materials, it requires a greater time commitment on editing and curriculum planning. This different perception of course preparation might result from the fact that there are limited technology-enhanced teaching resources on the existing market ready for ELL teachers to adopt.

Therefore, successful technology implementation inevitably requires teachers to rely on themselves developing appropriate teaching and learning materials.

Elaboration of Point #2

Second, Chen asserts that technology implementation can be used as a vehicle to promote students' learning motivation and to engage students in the learning process. However, on the other hand, technology implementation can also cause off-task behaviors and distraction.

Without direct eye contact with the teacher, students can easily hide behind the screen chatting or working on something else. Besides, students might be attracted to the images demonstrated on the screen without paying full attention to teachers' instruction. As Chen mentions, students have a tendency to have off-task behavior when the class is conducted in a language lab. Therefore, to reach the goal of effective classroom management, technology implementation will be less of the priority for many teachers. He says:

“A:那種語言教室,那種科技的那種課,...學生很容易做自己的事情,專注度會比較低,所以有的老師他本來也是用語言教室,但是他可能上課上半學期後,他決定要換到一般教室,因為我們有老師這樣講過,就是說那些學生都會做自己的事情

Q:喔,發現那些效果反而不好了

A:當然啦,你有電腦學生就喜歡去看那個畫面,但是相對的,老師在講什麼他可能都沒有在聽,對,這就是它不好的地方” (Chen_2_19:23).

“A: Having a class in the language lab...it's easy for students to wonder around on their own matter. Students cannot fully focus on the assigned task. So, some teachers originally instruct their classes in the language lab, but after half of the semester, they decided to switch back to the regular classroom. Some teachers said that it is because students are easily off-task.

Q: So, they found some negative outcomes when having classes in a language lab.

A: Of course when there are computers sitting in front of the students, their attention will be easily drawn by the images on the screen. In contrast, they will not pay attention to what the teacher is saying. This is one of the downsides with the use of computer technology” (Chen_2_19:23).

Apparently, based on Chen's experience and perception, we can find that even though computer technology has the capacity of promoting students' interests in learning, it is not an

efficient tool for classroom management. On the contrary, it will distract students' attention from teachers' instruction.

Elaboration of Point #3

Third, one of Chen's major concerns regarding technology implementation is its negative impact on the interaction and intimate relationship between teacher and students. Technology implementation can cause an issue of dehumanization because it can reduce or even eliminate human interaction if the interpersonal communication is done through the use of computer technology rather than face-to-face interaction. For that reason, Chen thinks technology implementation should not be overdone. Chen still values some characteristics of traditional instructional strategy such as face-to-face interaction and lecture-based instruction. As he argues:

“e化我覺得它的,它就適可而止啦,就是說它有它好的一面,但是不一定要所有的東西都e化,比如說有的傳統的上課的方式有它的好處啦,傳統的講解的方式有它的好處啦,因為e化的話,你跟,老師跟學生之間的互動的緊密性會大大的降低,就是說,你要靠學生去透過電腦,你們中間就,你們中間的那種關係就會比較鬆散啦,你如果是直接在課堂上用傳統的那種上課的方式,直接跟學生面對面溝通...有一些課,有一些課是要這樣子,比如說文學的課,對,那你文學的課如果叫學生自己再去透過網路上的東西去..有的學生,現在的學生沒有那麼用功啦” (Chen_1_38:26).

“I think technology-enhanced learning should not be overdone. There are certainly some advantages regarding e-learning, but it's not that everything should go that way. For example, we cannot deny that there are still advantages of the traditional instructional strategy. Lecture-based instruction still benefits learning. E-learning will undermine the closeness between teachers and students. That is, if the interaction is done through computers, the relationship between teachers and students will become loose. But some courses like Literature will require teachers to adopt the traditional instructional strategy and communicate with students face-to-face in the classroom. In a literature class, if you ask students to learn via Internet, well, they...you know, students nowadays are not so hardworking” (Chen_1_38:26).

The dehumanizing feature of computer technology interferes human interaction and it is this dehumanization that makes Chen believes that technology implementation is not appropriate for all classes. The above assertion also explains why Chen's instructional strategy reflects a feature of teacher-control (which will be elaborated in the later paragraphs) even when computer

technology is heavily used in his listening classes.

Elaboration of Point #4

Even though technology implementation is highly encouraged and promoted by the Ministry of Education, Chen claims that computer technology does not necessarily work well with all the courses he instructs. Chen uses computer technology for instructional purpose selectively. The factor that determines Chen's use or non-use of computer technology for instructional purpose is the nature of the content area and the course objective. Chen believes that technology implementation does not work well with courses (such as literature, translation, and composition) that require an in-depth analysis of the text. These courses require students to acquire the knowledge and skills through instructor's guidance and students' constant practice. Therefore, transmitting knowledge through lectures is considered as the most appropriate and effective way. According to Chen, the most powerful impact that technology implementation brings to ELL teaching and learning is its capacity of visual representation. However, in a literature class, the stimulus of visual images has limited impacts on students' comprehension, interpretation and appreciation of the masterpieces. As he says:

“但是文學課這種東西,可能它用光是看到某一個影像,他可能還是沒辦法理解,他可能還是要很深入的解說一些東西啦,所以它的影像的輔助的效果,相對沒有很強,相對沒有很強...因為它是注重那種比較細部的解說,而不是看那種多媒體的那種,給你的一些感官的印象這樣子...對阿,PPT也只是條列,你可能有一些圖片,可以讓學生有點興趣看圖片啦,不過那個對文學的素養的那種訓練可能幫助不是那麼大”
(Chen_2_17:13).

“For a class like literature, students still cannot capture the major themes by merely providing them with visual images. They still need the instructor's in-depth explanation of the text. So, in contrast, the effectiveness of visual aid is not that strong... A literature class will focus more on detailed explanation rather than on the sensory impression multimedia gives...PowerPoint only lists some visual images. The images will probably draw students' interests. But, it doesn't do much help in nurturing students' capacity of artistic” (Chen_2_17:13).

The above assertion reveals that Chen's belief of the effectiveness of computer

technology in education is in relation to motivation promotion and one's impression of new information. It has nothing to do with the development of humanity and a higher-order thinking ability.

Chen further states that computer technology can be optimally effective only when it is utilized in courses (e.g., listening comprehension class) that aim at developing four skills and when the course content targets on the acquisition of survival English. As Chen says:

“我是說這些有..所以我還是跟以前講的一樣,有些課很適合啦,但是有一些課比如說文學的課,我覺得就,要藉助於科技的地方可能不需要那麼多,當然也可以啦,比如說你也可以在上課放PowerPoint啦,放幻燈片那些,但是那個,那種作用在文學課,沒有比得上聽力課或會話課那些東西,比較生活化的課程”(Chen_2_16:18).

“As I mentioned previously, technology implementation is suitable for some courses. But courses like literature; it doesn't really require so much help from computer technology. Of course you still can use it, For example, you still can use PowerPoint and slides as a teaching aid. But its effectiveness is not as strong as it is in a listening class whose content is more life-related” (Chen_2_16:18).

Apparently, Chen only uses computer technology to lighten up the classroom dynamic and to draw students' attention. He does not believe that computer technology can foster serious learning or nurture higher-order thinking skills. Having this belief in mind, it is inevitable for Chen to implement technology in particular type of classes. Therefore, Chen does not perceive technology implementation as a panacea.

Actions

Technology Implementation Actions (RQ3)

Research Question 3:

What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?

The analysis indicates that two items summarize Chen's patterns of action in response to top-down decisions regarding technology implementation in this context

1. Technology implementation is used not for compliance.
2. Request teachers' autonomy for their instructional strategy.

Elaboration of Point #1

Situated in an evaluative context, the top-down decision of technology implementation does not fundamentally challenge or impact Chen's practice. Technology implementation is an act of free choice without external compulsion because Chen has been using computer technology for instructional purposes before the policy was enforced. Having positive experiences with technology implementation, perceiving its relative advantages, and being situated in a resourceful and supportive context make Chen more willing to incorporate computer technology in his instruction.

First of all, with sufficient computer literacy and positive personal experience with computer technology, Chen is able to perceive the desired results with the use of computer technology in the field of ELL. For example, Chen sees the effective outcome of technology implementation in promoting students' learning motivation and in creating a more enjoyable and interactive classroom dynamic. In addition, considering the return of investment and long-term value, technology implementation is a time saver because technology-enhanced learning materials can be reused over several years. Even though technology implementation requires more time commitment, Chen is still willing to devote time to it because he sees the relative advantages of it. As Chen points out:

“Q:可是會不會比如說您剛開始製作的時候是花很長的時間,可是如果這個教材不錯..

A:對對,是阿是阿,以後就可以,可以拿來用,是沒有錯,是有這個方便啦

Q:對,等於說前面幾年算是投資,多一點時間喔

A:對對對對

Q:所以也是因為您覺得說實際上應用在教學上效果不錯

A:很不錯,所以值得,對,值得去做這樣的教材” (Chen_2_23:51).

“Q: Are you saying that developing multimedia-based learning materials will cost you a lot of time in the beginning. But if it is a good one, you can...

A: Yes. That's right. You can use it for the future classes. It's convenient.

Q: So, it's kind of like investing more time on it in the first few years.

A: Yes, exactly.

Q: And it's also because you found that its effectiveness on teaching is good.

A: That's right. So, it's really worth it. It's worthwhile to develop this kind of learning materials" (Chen_2_23:51).

Second, in our informal conversation, Chen mentions that the school endeavors to create a tech-rich learning environment with an offer of sufficient technical support to teachers. Given the fact that Chen has positive experience with technology implementation and has sufficient computer literacy, Chen will retain his current instructional strategy with the use of computer technology even if there is no evaluative pressure. Apparently, technology implementation becomes less of a burden and tends to be more successful when resources and support are easily accessible and abundant. Besides, evaluative pressure is not the key to successful technology implementation; it is more related to resources and positive experience with the tool.

Elaboration of Point #2

When situated in an evaluative context, in response to the top-down implementation policy, Chen claims that teachers should have the autonomy to determine their own instructional approach. Teachers should have the freedom to decide their use or non-use of computer technology for instructional purposes. They also should have the right to decide “when” to use it and “how” it should be implemented in their instruction. As Chen claims, when technology implementation is a top-down policy, it is good enough to fulfill the basic requirement. Chen argues that:

“A:我覺得課能夠照我喜歡的方式上就好了,我不需要說一定要額外要去特別的e化或什麼的,對,e化的東西就是基本的有做就好了” (Chen_2_36:35).

“A: Well, I think As long as I can instruct the class in the way I like, I don't think that technology-enhanced learning is a must-have that we should particularly emphasize on. I think it is good enough to fulfill the basic requirement regarding technology-enhanced learning” (Chen_1_36:35).

Given the fact that Chen gives a lot of credits to the related advantages of computer technology in ELL teaching and learning, Chen's above assertion of “having my own way” and

his minimal compliant attitude toward the requirement of technology implementation is not an act against the idea of technology implementation. On the contrary, it reveals Chen's request of teacher autonomy in terms of their instructional strategy.

Chen's Major Themes and Emergent Findings

Buy into the Oppressive System

When hiring employees, the industry uses certificates as an indicator to judge the job seekers' professional ability. In response to the need of the industry, the Ministry of Education encourages schools to assist students to pass standardized tests to get certificates before graduation. On the other hand, the Ministry of Education also relates certificate to students' academic performance and the education quality schools provide to students. Therefore, the Ministry of Education also credentializes schools according to the number of certificates students receive. The MOE evaluation therefore, unconsciously creates an oppressive context in which schools' curriculum development is directed to be test-oriented for the purpose of passing the evaluation.

While some educators strongly criticize school's regulation of having students pass the language proficiency test (TOESL, TOEIC, GEPT, etc.), Chen sees the relative benefits of it. From the on-site observation and our informal chatting, I found that Chen integrates standardized test as a major part of his lesson planning. Chen thinks that what students learn in school should connect with what the local industry needs. Helping students to get language proficiency certificates can guarantee them to be more competitive on the future job market. As Chen asserts:

“我是覺得也好啦,強迫學生去做一點訓練,而且現在不只是學校,連公司都有阿...所以剛好在她們畢業之前考也對求職有幫助” (Chen_2_08:30).

“I think it (language proficiency certificate) is good because we can force students to do some training. Besides, not only the school but also the local industry asks for it...So, if we can have students get the certificate before graduation, it is helpful for their job

searching, too” (Chen_2_08:30).

The above assertion reveals Chen’s market-oriented educational philosophy in that school education should bridge students to the needs of the industry. However, many educators argue that teaching to the test shifts the curriculum design to overemphasize outcomes rather than on the learning process and it turns schools into cram schools. The promotion of language proficiency test taking can be considered as a selling point in response to the MOE evaluation. Teachers are positioned as salespersons to promote a policy many educators perceive to be misaligned and inappropriate. In other words, using the number of certificates students receive as an indicator to judge students’ language proficiency and as a standard to evaluate schools can lead to a controversial issue: is the Ministry of Education essentially encouraging testing or learning?

As Cuban (2004) argues that policymakers and teachers have different assumptions of teaching, learning, and schooling in which policymakers are looking for efficiency, outcome, accountability, and productivity but teachers value the development of students’ intellect and character. Chen is a great example to demonstrate how teachers unconsciously buy into the system that oppresses them without being aware of it. The MOE evaluation apparently has successfully shifted teachers’ perspective on what is important to the young generation and what is the purpose of schooling. Students are treated as customers and curriculum is developed based on profit-motive. When a policy is enforced merely for the purpose of meeting the needs of the potential customers (e.g., both students and employers) without having a solid educational assumption underpinning the decision, it is problematic and dangerous to the whole education system. Ultimately, from this finding, we should also take a further step and ask ourselves who benefits the most from this paradigm shift.

Teachers' Autonomy

When situated in an evaluative context, teachers attempt to maintain their autonomy regarding their instructional strategy and curriculum planning. The idea of teacher autonomy is embedded in Chen's assertions through a critique on the promotion of interactive CD-ROM. In addition, an action of minimal compliance to the top-down policy is used as a vehicle to ask for teachers' autonomy.

First of all, the integration of interactive CD-ROM has been highly promoted in the field of ELL for the purpose of technology implementation. However, due to its inflexible design and limitations, Chen criticizes interactive CD-ROM as an inappropriate teaching material for it restricts teachers' instructions within a particular instructional and pedagogical framework. Chen clearly points out his disfavor of this kind of restriction. He says:

“可是互動式的光碟就是說它比較受限於它自己的一些編排的方式啦,那本身我可能就對於這樣的限制不是很喜歡”(Chen_2_34:39).

“Interactive CD-ROM has restricted lay-out. I don't like that kind of restriction”
(Chen_2_34:39).

The above assertion reveals Chen's preference of having autonomy for what to teach and how the course content should be delivered. Chen is more in favor of the use of multimedia-based learning materials that are developed or modified by him.

Second, minimal compliance to the top-down policy of technology implementation is used as a vehicle to ask for teachers' autonomy when they are situated in an evaluative context. When technology implementation becomes a top-down policy rather than an act out of teachers' free choice, teachers tend to lose their autonomy. Fulfilling the minimal requirement is often found as an act to passively oppose to the policy. Teachers are the ones who know the best regarding what to be taught and how it should be taught. As Chen declares, technology

implementation cannot be overdone because it can hardly be successfully employed to courses of different natures and objectives. Therefore, when technology implementation becomes a requirement without consulting teachers' professional opinions and is used as a standard to evaluate teachers' performance, the validity of the top-down decision regarding technology implementation (e.g., posting teaching materials online) and its effectiveness on ELL teaching and learning should be called into question. Without seeing a strong need of using technology for pedagogical purpose, technology implementation is merely considered an entrance ticket for playing safe in the evaluation process. It is inevitable for teachers to have a passive-aggressive attitude in response to the top-down policy. The following statement demonstrates teachers' attitude and action in response to the top-down policy of technology implementation. As Chen mentions:

“可是po上網跟教學成效應該很難看出來.... po上網大家也都是應付一下”
(Chen_1_35:32).

“But posting syllabus and learning materials online has nothing to do with the effectiveness of teachers' practice...everyone has a perfunctory attitude toward this requirement” (Chen_1_35:32).

Chen sees the relative advantages of computer technology for ELL instruction and frequently implements computer technology in his instruction, but he puts teachers' autonomy at the forefront when technology implementation becomes a top-down requirement. His assertion and action both reveal that teachers' freedom in choosing their instructional strategy should be respected. Teachers' autonomy should not be exploited just for fulfilling a top-down policy.

Teacher Control

Even though computer technology plays a major role in Chen's instructional strategy, teacher control is still a distinguishing feature in his class. This feature can be identified from Chen's beliefs of ELL teaching and learning and my on-site observation of his daily practice.

First of all, Chen's notion of the role of teacher demonstrates that an idea of "teacher control" is embedded in his educational philosophy. Chen mentions that the role of teacher is to transmit factual knowledge; therefore, more than half of the class Chen instructs is lecture-based. The idea is to getting students' attention on teachers' lecture and the content attempted to be delivered. If computer technology is adopted in the instruction, it is easy to cause students' off-task behaviors. As Chen mentions:

“Q:那您其他的一些課,比如說翻譯課或是文學方面的課程呢?

A:我就都沒有在用,因為那種別的課可能只要講授,老師自己講授為主,如果說你還跑去那個使用那個教材的話,恐怕會影響老師那個講課的效果,而且大家一台電腦,那注意力會分散,比較容易分散啦,不如在教室裡面直接聽老師講注意力那麼集中” (Chen_1_12:35).

“Q: How about other course? Like Translation or Introduction to Literature?

A: I don't use computer technology for these courses. In these courses, lectures are good enough. It focuses on teacher's lectures. If we use technology-enhanced learning materials, it will have negative impact on the effectiveness of teacher's lectures. If each student has one computer, it's easier to distract them. It's better to have these classes in a regular classroom and have students pay attention to teacher's lectures. In this way, students can pay full attention to the teacher” (Chen_1_12:35).

The above statement signifies that a lecture-based class not only is an efficient way for classroom management but also places teachers in the center as an authoritative figure in the classroom. Chen's belief of teachers' role in the classroom as a mediator of transmitting factual knowledge is likely from the impact of Confucianism on educators in the Chinese community in that Confucianism perceives teachers as people who pass on knowledge, educate others on various subjects, and help them solve problems (師者,傳道,授業,解惑也). Therefore, many educators in Taiwan still carry this philosophy and view the essence of teaching as passing on knowledge to the young generation.

In addition to Chen's education philosophy, I also found the feature of "teacher control" embedded in Chen's practice from my on-site observation. I found that Chen's instructional

strategy remains the same with or without the implementation of computer technology for instructional purpose. Even though Chen uses computer technology in his instruction frequently, the use of technology implementation is limited to the purpose of drawing students' attention and promoting students' attendance rate. In addition, Chen's in-class activities are limited to one-way question-and-answer interaction for the purpose of checking students' comprehension of the text as well as increasing the engagement of the students. Chen believes that asking comprehension questions about the text can stimulate students' critical thinking abilities. As Chen states:

“用問問題的方式讓她們去了解我要介紹的那個重點,這樣子,讓她們自己去批判思考啦”(Chen_1_16:37).

“I ask questions in order to help them understand the key points. In this way, they can have a chance to think critically” (Chen_1_16:37).

However, the classroom dynamic tends to be rigid when the instructional strategy is one-way instead of reciprocal. The one-way question-and-answer interaction is merely a type of recitation and memorizing of the factual knowledge. Chen's instructional strategy in fact tends to be more teacher-controlled and does not allow students much space to reflect or to think critically. From my on-site observation, the one-way question-and-answer interaction is a classroom management strategy that can ensure students are on-task. In Chen's instruction, there are few reciprocal interactions and teacher is still positioned as a dominant role and an authoritative figure. In this case, technology is merely utilized as a stimulus to retain students' attention span. It is not used to optimize other learning components such as developing students' higher-order thinking ability or problem-solving strategy as Chen proclaims. From this case we know that even with the use of computer technology, the classroom dynamic is not switched from teacher-centered to student-centered as the policymakers and researchers predicted.

In addition, in dealing with students' off-task behaviors, Chen designs test-oriented

activities for every class to effectively retain students' attention and to check students' understanding of every unit of the lessons. Besides, Chen avoids instructing certain classes (e.g., literature, composition and translation) in a language lab because students can easily hide themselves behind the screen and do things unrelated to the course content. Chen's instructional strategy in response to the issue of off-task behaviors reveals that a more traditional way of instruction (e.g., one-way interaction, lecture-based and teacher-centered) is still more valued over the idea of collaborative learning. Chen's instruction reflects the idea of teacher control rather than the idea of student-centered and collaborative learning. A teacher-centered instruction allows little space for successful technology implementation because they are aiming at different objectives. Even when computer technology is used in some of Chen's courses, the function of computer technology is still limited to the purpose of classroom management (e.g., retaining students' attention) rather than for the purpose of enhancing students' learning.

Amplifying Causal Loop

In response to students' low learning motivation, Chen lowers his expectation on students. This can be identified from Chen's assertion regarding the objective of his courses (e.g., maintaining a good record of attendance, assisting students to acquire the basic language skills and promoting students' interests in learning). Chen's low expectations of students causes his minimal expectation of how much technology can do to ELL teaching and learning. To Chen, the only purpose of technology implementation is to promote students' attendance rates, to entertain students, and to have efficient classroom management. This explains why even with the implementation of computer technology, Chen still remains his original instructional strategy of one-way, teacher-centered interaction. One of the original goals of technology implementation is to create a learner-centered way of learning, but "teacher control" is still a major feature in

Chen's instruction even with the use of computer technology. From Chen's case, there is an obvious gap between teachers' perception and policymakers' and researchers' expectation regarding the impact of technology implementation on ELL teaching and learning. As a teacher whose workload is overloaded and technology implementation cannot fundamentally solve the issues (e.g., large class size, the lack of time and heavy workload) in his daily practice, a change of instructional strategy (e.g., switching from teacher-centered to student-centered) seems to be less possible.

In addition, Chen's lack of related knowledge regarding implementation strategy also contributes to his minimal expectation of the capacity of technology implementation. The school does offer workshops training teachers' basic knowledge of computer literacy, but the philosophy underpinning technology implementation and how it can be integrated into the existing curriculum are never the focus of the workshops. Teachers who are interested in technology implementation have to explore it on their own. It is not surprising to see that teachers directly implement technology in their instruction without a change of their original curriculum planning or a change of their current instructional strategy that they have been familiar with for a long time.

In short, Chen's concern in his practice leads him to lower his expectation of students' learning outcome that then causes his limited expectation on how much technology can do to ELL teaching and learning. On top of that, Chen's lack of related knowledge regarding implementation strategy also reinforces his limited expectation on technology implementation. Therefore, there is an amplifying causal loop that occurred, which causes teachers' limited use of computer technology for pedagogical purposes.

Discussion

From the above findings, it suggests that a traditional teaching strategy (e.g., lecture-based, teacher-centered and teacher as an authoritative figure) is embedded in Chen's teaching philosophy and is underpinning his instructional strategy. Technology implementation does not guarantee a change of belief; in this case, it only endorses teachers to look tech-savvy. When innovation (e.g., technology implementation) is integrated into a system without fundamentally re-examine and reconstruct its original system, it does not necessarily create a change of behavior or a change of classroom culture. Users might simply adopt partial concept and transfer it to the original system. This finding suggests that it will be challenging or the result might be disappointing if policymakers are hoping to use innovations (e.g., an innovative tool, strategy, or concept) as a medium to reinforce an educational reform. We should seriously reconsider the compatibility of technology implementation to the local classroom culture (e.g., large class size, teacher control) and the existing curriculum planning.

In addition, further trainings on the strategy of technology integration should be provided to teachers. Technology implementation should not be merely a top-down decision without providing teachers any assistance and guidance. Otherwise, due to users' inadequate knowledge of the innovation, technology implementation will be limited to a restricted repertoire. Schools should not simply provide equipment and then let teachers swim and sink.

Finally, as Chen mentioned, the requirement of technology implementation is listed inconspicuously among other evaluation criteria. For survival reasons, attention goes to more urgent issues that can credentialize the school in the evaluation process. Therefore, technology implementation easily becomes a minimal compliance when teachers are overloaded with teaching and administrative duties. Therefore, to avoid overwhelming teachers and to encourage

technology implementation, the MOE evaluation criteria should also be reevaluated. If more credit can go to technology implementation in the MOE evaluation system, teachers are more likely to invest time on attending professional training workshops, to explore an innovative instructional strategy, and to integrate computer technology into the existing curriculum. If the top-down policy is less of a punishment and more of an encouragement, teachers will be more motivated to adopt innovative instructional strategies.

Case #3: Charlene

Introduction to the Case

Charlene's major in college is French and her minor is in English. She received her master's degree in the field of TESOL in the United States. After graduation, she went back to Taiwan and started her first job in a publications firm for one year. Then, she taught English to college students as a part-time teacher in two universities and a private language institution for one year. Charlene continued her teaching career after she found a full-time teaching position in a college of technology located in the southern part of Taiwan. In addition to teaching, Charlene also had to fulfill administrative duty as the department secretary and the secretary of the principal. Two years later, she found another full-time teaching position in a college of technology in northern Taiwan and has been teaching in this school for eight years so far. Courses she has taught over the past ten years include listening comprehension, conversation, phonetics, reading, TESOL (in a professional development program for in-service teachers), English for Journalism, English Vocabulary, Cultures in English Speaking Countries, TOEFL & TOEIC preparation, business English, tourism English, and English Digital Content Production.

Charlene views teaching and learning as a co-dependent and reciprocal relation in that teachers and students can impact each other's teaching and learning motivation. However,

Charlene believes that learning is spontaneous and it is the student's responsibility to have intrinsic learning motivation. Teachers can only serve as a facilitator to provide resources and guidance to motivate students. While teachers expect students to be active learners who motivate themselves in learning, students and parents have an opposite expectation of the role of teachers and students. Students expect themselves to be passive receivers of information and teachers to be in a leading position in students' learning process. Due to the conflict of expectation, Charlene complains that teachers nowadays are treated as a nanny who has to take care of housekeeping job (e.g., monitoring students' attendance rates) because of students' poor self-discipline. Parents also tend to put the blame on teachers and schools for students' misbehaviors (e.g., skipping classes or being dropped out). Parents don't perceive these problems as the student's own responsibility and this will reinforce the issue of the student's poor self-discipline. In this situation, a lot of attentions, efforts, and time have to go to classroom management. Teachers are overwhelmed and their passion is worn out not only with overloaded teaching and administrative duties but also with classroom management issues.

When talking about the purpose of schooling, Charlene believes that schools should well prepare students for the future job market and the curriculum should be redesigned in order to be responsive to the needs of students and the expectations of parents. Charlene's educational philosophy reveals that she perceives education as a business and treats students as customers. Since the student population she interacts with is placed at the bottom of the academic hierarchy due to their low academic competence and poor academic performance, Charlene believes that students in the system of college of technology should acquire more hands-on skills rather than academic-related training in order to develop a salient qualification so that they can stand out on the competitive job market. Therefore, Charlene asserts that Colleges of Technology should be a

place to foster students' professional skills instead of academic capacity. More specifically, it is a place to nurture well-qualified employees for the industry by providing transitional training before students enter the job market. To achieve this goal, the school invites superintendents from the industry to offer advice on their curriculum development. Charlene believes this is an outstanding decision because the market-oriented curriculum design can assist students acquire skills and knowledge that meet the needs and requirements of the industry.

In addition, both the industry and the Ministry of Education use language proficiency tests as a standard to evaluate language proficiency levels. In response to the needs of the industry and to meet the requirement of the top-down evaluation criteria, schools incorporate language test preparation courses as the major focus of their curriculum development. While a lot of educators predominately believe that standardized tests tend to overlook the value of the learning process and overemphasizes the learning outcome, Charlene believes that diplomas and certificates are the entry ticket to the competitive job market. Charlene claims that there is a gap between what has been currently taught in schools and what the qualifications in potential employees the industry are looking for. Charlene believes that it is this gap that results in students' low interest in schooling because what they learned in school cannot be applied to the workplace. Therefore, Charlene believes that a curriculum reform should be taken into consideration in order to satisfy the needs of students and to meet parental expectations.

The central concerns Charlene encounters in her daily practice involve unfairly distributed workload, the issue of heavy workload, students' low interest in learning, and a large class size with mixed-level students. All of these concerns altogether result in an amplifying casual loop that places teachers in an overloaded, overwhelmed and disempowered position.

Unfairness is one of the major concerns in Charlene's teaching career. Charlene reveals

that there is a power issue happening in her department that causes an issue of unfairly distributed teaching loads among faculty members. This is political because the chairperson has the actual power to make final decision regarding who teaches what. Situated in a context with unequal power relation, Charlene was assigned with six different courses each year while many other teachers only need to instruct two courses. Unequally distributed duties often cause issues of disempowerment, heavy workload, and a lack of time. Unequal workload also damages the *esprit de corps* in the department because teachers feel reluctant to contribute their time and efforts to the department when they are treated unfairly.

Another major concern in terms of ELL teaching and learning is the issue of heavy workload. Charlene complains that teachers are overloaded and are expected to handle too many duties (teaching, academic research, and service) so that they cannot maintain high teaching quality. Charlene points out that when teachers are overloaded with teaching and administrative duties, it exploits students' right to receive a better quality of education. With the evaluative pressure, teachers' attention and efforts are directed to the fulfillment of administrative duties and academic research. In that case, teachers will have to cut down the time they spent on course preparation and grading. Charlene confesses that lesson plans are usually developed right before the class begins so that classes are often instructed with poor preparation. Teachers also need to come up with alternative approaches to evaluate students because of time concern. Approaches considered as beneficial yet time-consuming are often listed as the last priority of teachers. For example, Charlene believes that portfolio is the most appropriate assessment approach for ELL learners because it can effectively help students to visualize their own learning progress. However, it also requires more time investment than paper-and-pencil tests. In other words, due to the issue of heavy workload, teachers are forced to lower their standard regarding what they

want to offer to students and how much they can assist students in learning.

Another major challenge Charlene has in her practice is students' low self-expectation. Charlene criticizes that the young generation has a serious issue of not knowing what they want so that they tend to set low academic and career goals. With an issue of low self-expectation, the young generation's philosophy of life tends to be short-term and is more profit-oriented (or materialistic). In addition, according to Charlene's description, it is found that low self-expectation along with a profit-oriented value tend to result in an issue of low interests in learning. Therefore, schooling is no longer attractive to the young generation. To many students, earning a diploma through schooling has no substantial benefit (such as money making) but just a compliance to parents' and the society's expectation. Low self-expectation not only causes an issue of negative attitude toward learning, but also results in a problem of poor self-discipline. Therefore, students tend to cut corners (e.g., skipping classes, taking easy courses, or cheating on exams) and have poor academic performance because they are not self-motivated in learning.

Large class size with mix-level students is also a major concern Charlene has in this particular context. For profit concern, teachers are often asked to instruct a large class with a minimum of 60 students. Charlene complains that it is challenging to instruct a large class because attention usually will have to go to classroom management issues rather than teaching. Worst of all, large class size with mix-level students makes ELL teaching and learning even more challenging. Teachers often have difficulties finding or designing appropriate learning materials and activities for a mixed level class where individual students' language proficiency and learning history are diverse. Besides, a mixed level class requires more attention and special assistance to individual students. However, with a total number of more than 60 students in one class, it is impossible to achieve this goal. Finally, large class size also makes technology

implementation less likely to be successful. According to Charlene, to successfully promote students' learning with the use of computer technology, it requires time investment, constant practice and a full understanding of the functions of the technical devices. However, large class usually comes along with an issue of heavy workload. In order to be more efficient on course preparation and grading, technology implementation is often out of the question. Teachers still prefer traditional instructional strategy (e.g., lecture) and evaluation assessments (e.g., multiple choice tests) over computer-mediated instruction for the purpose of efficiency.

In response to the daily practice challenges mentioned above, several approaches are taken by Charlene. Since students' low learning motivation has been a great concern of Charlene's, creating an interactive learning environment becomes an endeavor Charlene pursues in her teaching career. The approach Charlene uses to promote students' learning motivation include the advocacy of the theory of learning by doing, a shift of course objective (from academic-oriented to goal-oriented), a change of instructional strategy (from traditional lecture-based to the use of technology implementation as a selling point), the use of a carrot-and-stick approach, and the view of students as customers.

First of all, Charlene is a proponent of hands-on learning and advocates the educational philosophy of placing students in the active role of learning because she believes that knowledge can be effectively acquired through constant practice. To solve the problem of students' low learning motivation, the objective of Charlene's lessons is to provide students with an authentic context, engaging activities and a variety of interesting learning materials. Charlene believes that ELL learners can be more motivated and can acquire the target language and culture better if they are exposed to an authentic, interactive, relaxed and enjoyable learning environment.

Second, considering the young generation's prevalent value (e.g., materialistic and a

pursuit of money-making), Charlene believes that the curriculum design should be goal-oriented (aiming at connecting schooling with future job market) rather than academically-oriented (aiming at developing higher-order thinking ability, humanity, and aesthetics) in order to promote students' interests in learning. In other words, schools should provide students with a vision of how they can apply what they have learned in school to real life situations and their future career. By showing students what they learned in school is practical, it can motivate students in learning. Simply transmitting the idea of the usefulness of a diploma and the importance of schooling can no longer attract students. The young generation does not value nor buy into that ways of thinking anymore. For this reason, Charlene's course objectives have been changed to meet the needs of students and the requirement of the industry as mentioned previously. Survival English, test-taking skills (for the purpose of getting language proficiency certificates), and hands-on trainings (e.g., field trips and internship opportunities) are included and highlighted in her curriculum design.

Third, Charlene uses computer technology as a selling point to promote students interests in learning because computer technology has audio and visual functions that enable technology-enhanced learning materials to be more interactive, interesting and authentic. Most of her courses are instructed with the use of interactive CD-ROM and online learning platform. She also designs course websites for the purpose of effectively communicating with students as well as exchanging information with other educators. Computer technology is also used to increase the time students focus on the task. As Charlene mentions that the young generation are digital natives so that traditional instructional strategy can no longer attract or satisfy them. Therefore, Charlene is against the use of textbooks and the traditional lecture-based instruction because she does not believe that knowledge can be effectively delivered through memorization and

recitation. Charlene is an anti-textbook type of person who believes that no particular textbook is good enough to enhance ELL teaching and learning. Charlene considers textbooks and lecture-based instruction as dull and enthusiasm killing in the acquisition of a foreign language.

Fourth, the carrot-and-stick approach is also adopted for the purpose of promoting students' low learning motivation. Charlene uses positive reinforcement to engage students in the learning process and to promote students' learning motivation. Simply having students sit in the classroom listening to lectures is enthusiasm killing. Charlene believes that having a constant question-and-answer session can help students concentrate on the task. To successfully achieve this goal and to motivate students, Charlene gives extra credits to those who actively participate in the in-class discussions. On the other hand, in order to develop students' self-responsibility for learning, Charlene gives pressure to students by assigning group projects and presentations as well as having pop quizzes. Students' efforts on learning are counted as part of their academic achievement. As Charlene mentions, encouragement should correspond with punishment so that students' motivation on learning can be fostered.

Context

In this paragraph, the context will be discussed from two aspects. First, the macro level of the evaluative context will be discussed from teacher's perception of the MOE evaluation. Second, the school's action in response to the MOE evaluation will be identified to illustrate the micro level of this particular school context in which teachers are situated.

Charlene is affirmative of the MOE evaluation in that it can overall improve the education quality and can benefit students. Due to the MOE evaluation, there are tremendous changes in structure and operation in this particular school context. More precisely, several changes regarding the school policy and the educational objective have been made for the

purpose of passing the MOE evaluation. The adjustments include the advocacy of technology implementation (by providing high-end facility), human resource reallocation (of both the faculty and administrative staff), senior faculty recruitment (by seeking better qualified faculty with leadership experiences), reevaluating and restructuring the existing curriculum (with a special emphasis on the promotion of language proficiency test, well preparing students for the future job market. combine theory and practice by providing internship opportunities to students, and connect school with the local community by integrating the local culture in the curriculum), and equal distribution of administrative duties among faculty members. In other words, the MOE evaluation creates an incentive structure to encourage schools to find remedy to the pedagogical and organizational issues in school context.

Charlene reveals that the change of structure and the reform of curriculum have great impact on the dynamic in the department. For instance, it promotes the *esprit de corps* among faculty because the administrative duties are equally and fairly shared. As Charlene points out:

“系上很多的行政,有的是分組,有些分組下來,其實大家其實都,每個人都在做是,那等於說就是那個responsibility就是share的嘛,所以不會覺得像以前壓力那麼大,就是工作都集中在我們幾個人身上阿,...那現在就是說我們系上其實還蠻和氣的,我覺得整個系上的氣氛都跟以前不一樣了,就感覺蠻好的啦,然後其實大家也都很願意做事情阿” (Charlene_2_12:11).

“Teachers will be grouped to share the administrative duties. That means everyone has to do something and the responsibility is shared. In the past, only a few teachers were forced to take care of the administrative duties...now, the working atmosphere in the department is pleasant because the duties are equally shared. The change of working atmosphere in my department makes me feel good. Everyone is more willing to do things now” (Charlene_2_12:11).

In addition to the issue of the distribution of workload, the recruitment of experienced senior faculty can also assist the school to reform into a better place. According to Charlene, senior faculties with leadership experience are able to provide guidance to junior faculty and serve as role models with respect to academic research. In addition, with the involvement of

senior faculty in the restructure of educational objective, the department is successfully reformed into a well-organized unit and the curriculum development is more systematic and unified. As

Charlene mentions:

“高階的師資就增加蠻多的,那現在其實系上大部分的事情都是她們在決定的,對對對,就是說她們也蠻多不錯的想法阿,那其實為我們系上注入了不少活力”
(Charlene_2_09:49).

“Because of the MOE evaluation, we recruit more senior faculty members in my department. Now, most of the decisions are made by them and they do have great ideas. In fact, these senior faculty members do infuse new life and more energy into our department” (Charlene_2_09:49).

Apparently, the MOE evaluation system is a monitoring system that can force the school to find a remedy for their existing structural problems and can ensure that the school provides a better environment for teachers and students.

Finally, the Ministry of Education will cut down funding or deny grants if students' language proficiency is not improved. In order to pass the MOE evaluation, the curriculum development has shifted its focus to a test-oriented approach in order to successfully provide evidence of students' language proficiency to the Ministry of Education committee members. Therefore, intense efforts have been directed to improve students' language proficiency with an emphasis on the obtainment of language certificates. While some educators argue that the reliance on test score can denigrate students' development of higher-order intellectual skills, Charlene is a proponent of the promotion of this particular policy. She believes that the development of test-oriented curriculum can well prepare students for the future job market since having a language proficiency certificate helps students to stand out in a competitive job interview. From Charlene's perception of the MOE evaluation, it is found that the MOE evaluation can overall create an incentive structure to encourage school reform and to restructure higher education in Taiwan into a better place to nurture students' learning.

From the above description, it is found that the MOE evaluation ensures high quality of education in that it creates an incentive structure to encourage school reform in terms of its organizational structure and the curriculum development. However, having an in-depth observation and analysis of the actual actions the school takes in response to the MOE evaluation, it is also found that the school cuts corners and beautifies records for survival reasons. In this case, the MOE evaluation turns out to unintentionally create a demoralized structure that is detrimental to teacher morale and the higher education in Taiwan. Regarding the evaluation, the Ministry of Education does not endorse a particular approach or a rigid standard to the restructuring of school operation and their curriculum development. However, schools will identify certain principles and strategies for school restructure from successful cases of other schools. The problem is that not every school shares the same resources, guidance, or financial assistance. Therefore, the attainment of the “standards” becomes challenging to many schools, especially when they have time pressure for restructuring. It is not surprising to see that cutting corners and nominal restructuring are the common approaches schools take in response to the top-down evaluative pressure.

Charlene criticizes that what the Ministry of Education evaluation committee saw during their visit of the school and the records the school submitted couldn't give a true picture of what is going on in the classrooms. For survival reasons, the school will beautify their current condition by tactically present a sugarcoating record to the MOE evaluation committee members. In fact, in the record, many things are done in name only and will not be continually carried out or updated after the review. As Charlene argues:

“教育部的是失真的阿,他看到的只是一個表象的東西” (Charlene_2_55:44).

“What the Ministry of Education evaluation committee members saw was lacking fidelity. What the school shows them is just a facade” (Charlene_2_55:44).

The above assertion clearly demonstrates the school's corner cutting behavior in response to the MOE evaluation. Apparently, when a top-down evaluation system threatens the survival of the school, it is inevitable for the school to work to get around the loophole for survival reasons.

The shortcut the school takes can be identified from four aspects. It includes the strategy of maintaining sufficient student population, the remedy for students' low learning motivation and poor academic performance, the requirement of technology implementation, and the creation of a teacher evaluation system.

First of all, the success or failure of student recruitment is used as one of the indicators to determine the educational quality the school provides. Given the fact that the tuition is also a major financial resource to sustain the survival of the school and the school currently faces a challenge of student recruitment and encounters a difficulty of maintaining the current students, the school has to get around the loopholes for survival reason. In order to be able to demonstrate a good record to the MOE committee members, the school figures out a remedy to please students by restricting and regulating teachers' grading approach. By doing so, they can attract students with lower academic capacity to enroll and at the same time, maintain the current student population. Therefore, teachers are asked to lower their standard on students' academic performance. Charlene points out how the school's intervention in teachers' grading reinforces students' low learning motivation and damages faculty's morale. Charlene says:

“就覺得對老師的干涉太多,然後又要干涉我們老師說什麼評量,我們學期最後的總成績要平均要60到85,就是規定老師這種,嘖,干涉老師的評分,難怪現在學生都不用老師阿,反正我很混我也過阿,不過就暑修嘛,反正我有錢嘛,對不對,不然就延畢嘛...所以現在很多老師就覺得,你不要學就算啦,那我還是教我的阿,現在很多老師都下面沒在聽,睡一攤他也不管,他還是就是要講的講完,反正我就來領這個錢阿,我講完我就下課我就走了,那你學到多少是你家的事情,那我就是符合學校的規定”

(Charlene_3_50:15).

“I felt that the school intervenes too much regarding teachers' grading. They regulate

that the final grade should be rated between 60 to 85. No wonder students nowadays disregard teachers. Why should they study hard? They can pass anyway. If they can't, they still can take the summer courses. They can pay to get the credits. Otherwise, they can always postpone their graduation for one or two years....So, many teachers now do not really care about students' learning motivation. They just go to the class, finish what they prepared to teach, get the money and go home. Even if lots of students fall asleep in their class, they don't care. They don't care how much students learn. They just simply follow the rules" (Charlene_3_50:15).

Apparently, this misaligned policy creates an amplifying casual loop because lowering standards and expectation will result in students' low motivation in learning, and in return, will have negative impact on teachers' teaching motivation. This policy places teachers in an oppressed position and have distorted control over teachers' grading approaches. For that reason, it will also damage teachers' morale because teachers lose their autonomy in grading. Instead of fundamentally reforming the structure of the school or endeavoring to improve education quality, the school comes up with an alternative solution that can immediately resolve the problem of student recruitment, but in a long run, will lead to a drop in education quality. This remedy is generated in response to the top-down evaluative pressure since the MOE evaluation does not allow sufficient time for schools to rectify their problems and does not provide supervision and resources. It is inevitably for the school to get around the loophole for survival reason.

In addition, Charlene complains that many plans in response to the MOE evaluation are drawn up by the school in name only. They are merely treated as a record to show the Ministry of Education that the school is doing something without caring too much of its substantial effects on teaching and learning. For instance, to understand the reasons of students' low motivation in learning, the school has the administrative staff conduct a survey and create statistical reports regarding students' concerns in learning. However, a follow-up remedy for this issue is never of interest to the school. Charlene complains that this kind of cosmetic compliance to the policy is wasting teachers' time. She says:

“可是我覺得都是很表面的功夫,比如說,他要我們老師就是寫什麼訪談表,問題是我們寫的那個表,就是,他就是要數字統計出來,比如說你這個老師這個學期你要交幾份,大家都是在乎你那個份數有沒有繳齊,是很多事情都在做表面功夫,可是問題是,誰在看你寫的那些東西,你花很多時間在寫,誰會看?有誰會去看,就是廢紙了嘛,就是數字嘛,他就是看數字嘛...也沒有follow-up的東西阿,沒有阿,那你老是叫我們老師寫那些表幹麻”(Charlene_1_54:39).

“Many things the school did are just to make a fine show. For example, they want teachers to interview students and write a report. But the problem is that they only care about the number of the reports teachers submit and whether teachers fulfill this requirement or not. They just want the statistical reports. It is so superficial. No one will read the reports no matter how much time you spend on that. No one cares about it. It is just a pile of waste paper and numbers. All they want is numbers....The school never offers any follow-up remedy. I really don't understand why the school always requests teachers fill the form” (Charlene_1_54:39).

From Charlene's statement, we can find that the MOE evaluation is unintentionally directing the school and teachers' attention to something unsubstantial and leaving the urgent issues behind. The school's cosmetic compliance to the evaluation criteria is a way of sugarcoating their current structural problems. Even if the school passes the evaluation, there is no guarantee of educational quality. In this case, the MOE evaluation is no longer a monitoring system; on the contrary, it unintentionally deteriorates the existing educational problems.

Technology implementation is another example of the sugarcoating record the school presents to the MOE evaluation committee members. The myth of the technology implementation is that it is often recognized as an innovative instructional approach and a guarantee for successful learning outcome. Using technology implementation as a selling point can guarantee the school to be credentialized in the MOE evaluation. A successful technology implementation is an ongoing process that requires time, training, and funding. However, this is never of the interest to the school because the school has time pressure in response to the MOE evaluation. When efficiency comes to the forefront, it is found that attention usually goes to things that can immediately benefit the school during the evaluation process. Therefore,

computers were brought to the classrooms, teaching materials were requested to be uploaded online, records of technology implementation was submitted, but, computers remain sitting at the corner, the online information is never updated, and the beautified record of technology implementation satisfies the Ministry of Education. Apparently, technology implementation is used as a selling point to represent the “high quality” of education schools offer. Submitting a record of technology implementation becomes a shortcut for the school to gain credentials when situated in an evaluative context. The actual use of technology in the classrooms and its substantial impacts on teaching and learning are less of interests of the school. As Charlene mentions:

“學校就只有提供一個平台嘛,一個數位平台,那就要老師我們上傳一些東西上去阿,可是我就覺得說就是很表面的東西,就是老師一定樣上傳什麼PPT阿,一定要上傳什麼講義上去阿,可是我覺得用的老師真的不多耶...那當然就是跟你的評鑑,跟你的改大都有關係阿,因為它都要看你的那個數字阿,看你的使用率阿,看你的什麼的阿,對阿,就是看那個numbers嘛,那其實很多東西都是很表面的東西阿” (Charlene_3:50:15).

“The school offers an online platform for teachers to upload some teaching materials. But I think it is also just a fine show. Teachers are required to upload PowerPoint files and handouts, but not so many teachers use it for pedagogical purpose...of course it is about the MOE evaluation. To be upgraded to a University of Technology, the Ministry of Education pays attention to the numbers and the usage rate. They want numbers. So, many things are superficial” (Charlene_3:50:15).

Charlene reveals the true story of technology implementation in this school context. Even though the record looks perfect, the learning environment is technology-enhanced, teachers seem to be tech-savvy, and everything is online, what is seen still cannot represent what is actually happening. Technology implementation is merely used to solidate the record submitted to the Ministry of Education for review. It is a cosmetic compliance rather than an effective instructional strategy welcomed by overwhelmed teachers on the front line.

Finally, to successfully pass the MOE evaluation, the school carries out several policies to ensure that they can demonstrate a solid record of teachers’ performance and students’

academic achievement to the MOE evaluation committee members. However, it is found that the policies the school establishes are misaligned and unfair so that they create more pedagogical issues in this particular school context. For example, the school creates a teacher evaluation system with a special emphasis on teachers' performance regarding teaching, academic research and service. This is a top-down evaluation system which teachers are expected to conform to. However, Charlene questions the validity of the teacher evaluation system and perceives it as a failure in that it is unfair and political that oppresses teachers on the front line.

First of all, Charlene views education as an endeavor that requires educators' moral conscience. In other words, teachers have the free will to decide the allocation of time and efforts they want to devote to teaching, academic research and service. However, moral conscience is a value judgment that the evaluation system cannot examine. For that reason, Charlene argues that the evaluation is an unfair system. Charlene euphemistically implies that some teachers, like her, with higher standard of moral consciousness, often have to sacrifice their personal time in order to maintain a high quality of education and service to students. However, this type of teachers does not necessarily to be acknowledged and rewarded for their devotion and contribution. On the other hand, in order to reduce the overall workload, other teachers who are more profit motive tend to sacrifice students' rights of receiving better quality of education. They can easily find the loopholes in the system by fulfilling the minimal requirement, and at the same time, are often found to be recognized and be awarded with the title of "outstanding teachers." As Charlene argues, the title of "outstanding teachers" and the validity of the teacher evaluation system should be therefore called into question. Charlene points out how the teacher evaluation system operates in her school and why it is unfair. She says:

“那它就是要求我們老師就是要寫自評表嘛...那其實我會覺得這個做法,恩,我覺得那個積分表,當然有利有弊啦,那我覺得很好笑的是,其實我覺得我們學校很多事情都很

好笑,哈,比如說你就常知道那些,常常看到那些學生口中很濫的老師,然後獲得什麼優良教師,你罵到不行的老師變成優良教師”(Charlene_2_55:44).

“The school requests teachers to submit a self-evaluation form...I think the evaluation form and the whole teacher evaluation process has pros and cons. I think the funniest thing is, well, many things in my school are funny. It is funny that teachers who have bad reputation among students are eventually awarded with “excellent teacher”. Those teachers whom were complained a lot by students become “excellent teachers”, you know” (Charlene_2_55:44).

From Charlene’s statement, we can see that teacher evaluation is also an invalid system that cannot represent the real situation in the classroom. Apparently, it is a political system that situates teachers in an even more disempowered position.

Moreover, according to Charlene, the teacher evaluation is an unfair process in that it is not open to the public and many decisions are made involving political concerns. The school regulates the department to evaluate teachers on a curve with one teacher rated as “excellent,” one as “unsatisfactory,” and the rests as “average.” Teachers will be rewarded or be punished by the results. The department chair has the actual power to decide who can be rated as and be awarded with the title of “distinguished teacher” without opening the decision-making process to the public. Charlene questions the validity of the teacher evaluation system and argues that:

“考核制度它的功效在哪裡,其實我是保持一個懷疑的態度,那就是看主任高興”(Charlene_2_01:11:43).

“I’m very skeptical about the validity of the teacher evaluation system. The result actually depends on the department chair’s preference” (Charlene_2_01:11:43).

Apparently, this teacher evaluation system reinforces the power inequality in this school. The result cannot fairly represent teachers’ efforts. It is a rather political process and it clearly shows the hierarchy and the power relation in schools.

Besides, in order to be “fair,” the department chair decides to have teachers take turns to be rated as the least qualified teacher. As Charlene mentions:

“Q: ok,因為你上次有跟我提到說系上老師必須要輪流看誰拿乙,這樣子

A:對對對,之前就是,恩,就是有這樣子,因為主任不想當壞人嘛,那他就說那唯一的辦法就是讓大家輪流嘛”(Charlene_2_53:38).

“Q: You mentioned to me earlier that teachers will have to take turn to be rated as “unsatisfactory” for the teacher evaluation.

A: Yes. It is because the department chair doesn’t want to offend anyone. So, he believes that the best way is to have teachers take turn to be rated as “unsatisfactory””
(Charlene_2_53:38).

According to Charlene’s statement, the chairman’s decision in fact turns the teacher evaluation into an unfair and nominal system. The teacher evaluation system is originally created to be an incentive structure to encourage professional development and to improve classroom instruction. However, due to the unfair enforcement and political human attempt, it turns out to be a demoralized system that denigrates teachers’ efforts and devotions. The teacher evaluation system is apparently used as a power wrestling for the attainment of personal fulfillment rather than for the purpose of enhancing education quality. An incentive structure therefore becomes a punitive structure that damages the *esprit de corps* in this particular school context. Teachers often feel unfair, disempowered, and are at loose ends. The process of teacher evaluation is very political and its validity still remains controversial. When being asked about her central concern in her practice, Charlene complains about the unfairness of the teacher evaluation system and says:

“Q:你說你最大的困擾是什麼?

A:困擾就是我覺得不公開,不公正,不公平阿,不透明,那我覺得這種事情,那你不然大不了你就公佈嘛,比如說誰拿優嘛,那為什麼她們優嘛,那幾分嘛...那那些拿到優的真的積分比較高嗎?那你說拿到績優導師的,那些人真的比較好嗎?I don’t think so,這是看主任要給誰阿”(Charlene_2_01:15:28).

“Q: What’s your major concern in your teaching career?

A: I am very bothered by the teacher evaluation system. The process is not open to the public and it is not impartial, not fair and not transparent. I think the department should announce the result to the public. Who is awarded as an outstanding teacher and why? What is their total score?...Do you really think those “excellent teachers” have the

highest score? Are they really better than anyone else? I don't think so. It really depends on the department chair's preference" (Charlene_2_01:15:28).

From the above description of the context in this particular school, it is found that the MOE evaluation unintentionally creates a hierarchical structure which places teachers at the very bottom of the system of governance. It also reinforces the power struggle between teachers and the school. When the school is situated in an evaluative context, administrators tend to formulate misaligned and profit motive-based policies which are often found to be ignorant of the realities of the classroom situations. In other words, administrators play a leading/dominant role in determining the pedagogical development, while the department (including the chair person and faculty members) is disempowered. Teachers who possess instructional expertise and pedagogical knowledge they gained from working with students on the front line are forced to adhere to the norms, standards, rules, and expectations exerted by those above them. In addition, the school lays down the evaluative pressure down to the department by having them submitting reports regarding teachers' and students' performance. In response to the top-down pressure, the department exerts its power over teachers with overloaded teaching and administrative duties. Apparently, there is an inequitable power structure embedded within the educational system in this particular context. Situated in the hierarchical structure, it is not surprised to see that teachers become victims and their professional opinions regarding pedagogical issues are not properly recognized and acknowledged. Charlene points out the inequitable power structure in this school and criticizes that teachers are overpowered by the administrative staffs:

“我覺得這是學校的問題,這是整體學校的整個問題,那我覺得我們學校的系主任又沒有足夠的power去跟學校對抗,因為我覺得我們學校是行政主導學術的,我覺得我們學校的學術主管都沒有聲音,不然就是很俗仔,我必須這樣講,那我是覺得說其實對這一塊我是蠻失望的,就是說讓行政來主導學術,我覺得行政單位的主管,或是職員,我覺得感覺上還比較囂張一點,哈,就是,對阿,那我們就覺得說,她們行政單位還可以來評鑑我們老師,那我們老師可不可以去評鑑行政單位?” (Charlene_2_55:44).

“Overall, I think this is an organizational problem. In my school, department chairs do not have enough power to fight against the school. Executive directors are leading the development of pedagogy. I feel that the department chairs in my school are either voiceless or cowards. I’m afraid I have to say so. In fact, I am very disappointed that administrators have the power to make decisions of academic issues. I feel that the executive directors or even the administrative staffs are very domineering. They can evaluate teachers’ performance but we cannot evaluate them” (Charlene_2_55:44).

The above examples demonstrate how the school gets around the loopholes when they are situated in an evaluative context. The original purpose of the MOE evaluation aims at reforming higher education (in the College of Technology system) into a better place to nurture students’ higher-order intellectual ability as well as their professional skills. However, without a clear agenda, standard, guidance, and support, this top-down evaluation forces schools to find loop holes in the system and therefore creates an amplifying causal loop that eventually is detrimental to the education quality and adds to the burden of educators at the front line. An incentive structure unintentionally becomes a punitive structure that eventually causes more pedagogical and organizational problems in higher education in Taiwan.

Beliefs

Charlene’s Perceptions of CALL implementation (RQ1)

Research Question 1:

What are ELL teachers’ perceptions of technology implementation for instructional purposes?

The analysis indicates that five items summarize Charlene’s perceptions of technology implementation for instructional purposes.

1. Charlene believes that technology can promote students’ motivation for learning.
2. Charlene believe that technology is a time saver.
3. Charlene believes that technology is a facilitator (in assisting learning & for efficient information exchange).
4. Charlene believes that technology is not a panacea.
5. Charlene believes that it can be a burden to teachers when technology implementation becomes a requirement.

Elaboration of Point #1

Charlene perceives multimedia technology with video function as a powerful tool in promoting students' interests in learning and in creating an engaging classroom dynamic.

First of all, Charlene believes that the young generation is digital natives and technology implementation fits well with the young generation's needs and learning style. According to Charlene, text-based instruction can no longer fulfill students' needs and interests. With the use of multimedia learning materials, students can be more motivated in learning. As Charlene mentions:

“我是有唸到一些文章,它是說未來下一代她們是什麼digital natives嘛,對不對,所以她們的學習方式,她們可能會不再,就是說比較不能夠focus在那種紙本的東西,她們會比較可能希望有一些科技的東西,比如說有一些多媒體的東西在裡面,可能會對她們的動機或許會有些幫助”(Charlene_3_00:08).

“Some articles I read said that the young generation are digital natives. So, their learning style can no longer keep them focusing on text-based materials. The young generation likes to learn through technology-enhanced materials, such as the use of multimedia. This might promote their learning motivation to a certain degree”
(Charlene_3_00:08).

Being able to connect students' learning style and the potential advantages of technology implementation, Charlene is affirmative of the use of computer technology in ELL learning.

Second, Charlene perceives computer technology (e.g., the use of interactive CD-ROM that includes movie trailers, pop songs and fashion, the use of Internet, online dictionary, Wikipedia and car rental website, YouTube, etc.) as a powerful tool that allows teachers to provide authentic materials to ELL learners. The content and the language being used in multimedia learning materials are more relevant and current. Therefore, the topics being introduced are more interesting and can promote students' interests in learning. From Charlene's observation, when multimedia is used, students tend to engage more in the in-class activities. Charlene mentions that:

“你就會覺得課堂氣氛會比較熱絡一點,對,所以我是覺得說,第一個就是增加她們的 motivation 嘛,第二就是說,我會覺得使用,光只有使用那種,只有 audio 跟有 video,我覺得效果,我真的覺得有差,我覺得她們會比較,會還蠻有興趣去看那個影片的” (Charlene_1_01:13:22).

“You can feel that the classroom dynamic is more engaging. So, I believe that first of all, it can promote their motivation. Second, I found that there is a great difference between materials with audio functions and the use of video. I found that students have greater interests in watching films” (Charlene_1_01:13:22).

The objective of Charlene’s classes is to create an engaging learning environment to promote students’ interests in English language learning. Charlene is able to see the relative advantages of technology implementation. Therefore, from my on-site observation and my review of the class website she creates for her classes, I found that she does not assign textbooks to her classes. The materials Charlene uses are not pre-designed for ELL learners. Instead, interactive CD-ROM, movie trailers, pop songs, YouTube clips, Wikipedia, and retailers’ websites (such as car rental, hotel, etc.) are the major resources Charlene relies on in the development of her lessons. I also had informal conversations with some of the students and they are positive towards Charlene’s efforts on integrating diverse, interactive learning materials in their lessons. Students mentioned to me that films are more interesting than most of the textbooks they have been using in the past. Multimedia learning materials attract them to attend Charlene’s classes and make them feel that English language learning is not as boring as before. Apparently, the use of multimedia learning materials successfully creates an interactive classroom dynamic and promotes students’ interests in learning.

Elaboration of Point #2

Charlene perceives the use of computer technology (interactive CD-ROM and course websites) as a time-saver in ELL material development, course preparation, and classroom management.

First of all, Charlene perceives the Internet as a powerful tool that allows teachers to find teaching resources efficiently. With the use of computer technology, it is easy to access to the abounding online resources. Therefore, the use of computer technology is also time-saving for course preparation. Charlene compares how she finds her teaching materials before and after her reliance on the Internet. She says:

“我覺得對老師來講的話,...可以節省老師,想我們以前都會,還要去什麼,去那個什麼書店去找書,對不對,然後現在還節省蠻多時間就是,你就上那個網站去...裡面那個介紹都還蠻清楚的,就想說,ㄟ,那要用哪一本書,然後有些資料,找資料什麼的,我覺得還蠻方便的” (Charlene_3_35:44).

“I think it (the use of Internet for searching teaching materials) can save teachers a lot of time. In the past, teachers have to find teaching resources in several bookstores. But, now, you can just Google. Publishers usually have an official website and they provide detailed information of the teaching materials. So, I think it is really convenient for teachers to find resources and to select textbooks for students” (Charlene_3_35:44).

Apparently, the Internet saves teachers a lot of time on finding appropriate teaching materials and on preparing their lessons. It allows teachers to access various resources and makes efficient course preparation possible.

Second, the lessons in the interactive CD-ROM are well designed with the integration of text and visual images. These kinds of learning materials fit the needs of Charlene and her students. According to Charlene, teachers can simply adopt the materials the publishers provide in the interactive CD-ROM even without advanced computer literacy. Therefore, it can save teachers a lot of time on course preparation.

A:我覺得其實那個互動光碟片,其實幫老師節省很多時間,我覺得它是一個

Q:怎麼說?

A:就是你不用自己再去找一些,你不用在網路上錄東西,然後去YouTube找影片阿,你知道我的意思嗎?

Q:恩

A:就是它可以幫老師偷懶,我必須這樣講” (Charlene_1_01:19:20).

“A: I think interactive CD-ROM can really save teachers a lot of time.

Q: How so?

A: Teachers do not have to spend time finding teaching materials. We don't have to go online and record video clips from YouTube, you know.

Q: Um.

*A: It can help teachers to lie down on the job. I have to be honest with this”
(Charlene_1_01:19:20).*

From Charlene's assertion, we know that the well-designed lessons in the interactive CD-ROM saves Charlene a lot of time on course preparation. Even though Charlene does not have time to create her own multimedia-based teaching materials, simply using the interactive CD-ROM is still better than a lesson that fully relies on textbooks and lectures.

Third, if teachers create a course website where all teaching materials are uploaded, it can serve as an archive and the materials can be easily retrieved for future courses. Therefore, in the long run, developing a course website is time-saving in terms of course preparation even if teachers will have to invest more time on the development of course website in the beginning. In addition, it is a convenient approach for teachers to manage and instruct their classes by using course website. It saves teachers time on printing and distributing learning materials. The digital files can also serve as a facilitator in assisting teachers organizing and managing the materials for future use. It also provides students easy access to the course materials for review. As Charlene mentions:

“Q:所以去做這樣子的一個course website,會不會花掉你非常多的時間?

A:不會,不會,不會,我覺得不會,因為如果會很花我的時間我就不會做,哈,對,我覺得這是為了我的教學的便利跟節省我的時間,因為我已經做得很上手了,已經熟悉,如果說是那種很浪費我的時間,比如說要去設計什麼layout,要幹麻的那種,我覺得是不必了,哈...而且也幫助我管理我的那個每堂課上課的東西,那我以後就是點上那個網站”
(Charlene_2_49:51).

“Q: Will it take you a lot of time developing a course website?

A: No. Of course not. I don't think so. If it's gonna to take me a lot of time, I won't do it. Ha! The reason for me to develop a course website is to facilitate my teaching and to save my time. I am skilled and so familiar with the functions. If it's something that will waste a lot of my time, like, designing a layout or doing this and that, I will just drop the idea of using it. Ha!...Having a course website can also help me to manage the teaching

materials for every courses I instruct. I can just link to the website during my instruction”
(Charlene_2_49:51).

From my informal conversations with Charlene and my on-site observations, Charlene uses free templates to develop her course websites. With basic computer literacy, teachers can easily create and manage their course websites. Charlene received the related training and information of the free online resources from her graduate training in the United States. Therefore, her ability of website design and her knowledge of the relative advantages of technology implementation for instructional purposes make her a frequent user of computer technology in her instruction.

Elaboration of Point #3

Charlene believes that computer technology is a facilitator for assisting ELL learning and is a channel for efficient information exchange.

According to Charlene, it is essential to provide ELL learners both the aural elements and the visual referents (e.g., the speakers’ body language) to assist them in acquiring a foreign language. With the use of computer technology (e.g., CD-ROM, films, etc.), students can better understand the language component being introduced. In addition, ELL learners often have a difficult time capturing the abstract concept of an unfamiliar cultural concept when the concept is introduced through text-based materials. Charlene perceives computer technology as an effective tool for ELL learners in acquiring the target culture because through the visual representation, teachers can easily situate students in an authentic context. In other words, the cultural messages (abstract concepts) can be easily captured through observing the characters’ language use and body language in the visual representation. As Charlene points out:

“學生沒有看過,他沒有體會過,你再怎麼去講,他都不知道,可是如果有一段影片,或是圖案給他看,她們馬上就,你知道嗎,她們馬上就可以pick up起來”
(Charlene_3_01:14:07).

“If students never see it and never experience it, they will not understand at all no matter how hard you try to explain it. But, if we show them a video clip or a visual image, they can get it right away, you know. They can pick up the message immediately.”
(Charlene_3_01:14:07).

From Charlene’s teaching experiences, we can see the power of the visual representation in assisting ELL learners acquiring the target language and culture. Comparing with text-based materials, the use of computer technology in instruction makes ELL instruction more efficient and effective.

Moreover, computer technology can provide students with easy access to a variety of learning resources. Students can therefore extend their learning outside classrooms after school. Learning will no longer be restricted within the boundary of the physical environment in school context.

Finally, Charlene mentions that computer technology (e.g., the Internet) can create a channel for enhancing the communication among educators. The use of computer technology allows educators to share information efficiently so that educators can improve the education quality through collaboration and ideas exchange. Charlene shares her experiences of browsing other ELL teachers’ websites and the benefits of doing so. She says:

“你有時候可以去參考,像有很多老師他會有一些教學網站嘛,那我覺得可以就是說教學上面大家可以有一個交流” (Charlene_3_38:02).

“Sometimes you can visit other teachers’ professional websites and use it as a reference to enrich your teaching resources. Teachers can exchange ideas regarding ELL issues online” (Charlene_3_38:02).

Charlene, in a way, is also motivated and inspired by other educators when she has easy access to the online information. As Charlene told me in our information conversations, she constantly visits other educators’ website and attends workshops in order to gain more creative ideas of lesson planning. Seeing other educators’ enthusiasm for teaching also keeps her

motivated. Charlene values the idea of building an online community for Taiwanese educators because it will be a place for teachers to share ideas, to reflect thoughts, and to support each other. Apparently, from this case, we can see that the impact of the community on teachers' enthusiasm for teaching is more powerful than a top-down evaluation.

Elaboration of Point #4

Charlene perceives technology not as a panacea to the issues (e.g., students' low learning motivation, students' poor academic performance) she encounters in her daily practice, but as a facilitator to promote students' interests in learning. The idea of "technology is the answer to the problems in the classroom" is problematic because it excludes or simplifies the problems in reality. If computer technology is not appropriately used, it can create more problems. As

Charlene says:

“我覺得科技真的沒有辦法解決所有的問題,它還是有很多很多的,就是可能解決了某些舊有的問題,可是又衍生了新的問題” (Charlene_3_41:43).

“I really don't think technology can solve all the problems. It might be a solution to some old problems, but it can create new issues afterwards” (Charlene_3_41:43).

In other words, technology implementation can be a solution but not a panacea in dealing with the challenges in teachers' daily practice. After all, a successful implementation of technology is context dependent and the teacher is the key. Charlene believes that a successful technology implementation is determined by the way (the approach) teachers utilize and integrate technology in their instruction. The idea of technology implementation is good but the tool cannot stand alone without an appropriate implementation strategy. According to Charlene, the teacher is still the key to a successful instruction. As Charlene states:

“當然科技是一個輔助啦,可是我覺得還是要看老師怎麼去用它,因為你如果老師不用心,你再多的東西湊合起來也不可能發揮它的,我覺得科技不能解決所有的問題,不是說你運用了多媒體的什麼東西,然後你的教學突然成效就會提高,然後你的學生的動機就會提升很多” (Charlene_3_00:08).

“Of course technology can be an aid, but I still believe that it depends on how teachers use it. If teachers do not put efforts on learning how to use it, it still cannot be effective regardless of how many technical devices you implement. I don’t think technology can solve all the problems. It’s not that you can increase your teaching effectiveness and promote students’ motivation simply because you use some technology”
(Charlene_3_00:08).

From Charlene’s assertion, we know that the teacher is the key to successful technology implementation, not the tool itself. Therefore, it is necessary to provide teachers with sufficient training, support, and resources in order to successfully integrate technology for instructional purposes. Simply providing teachers with the equipment and expecting them to use innovative tools is idealistic. Without further training on implementation strategy, it is challenging to meet the goal of successful technology implementation.

Elaboration of Point #5

Most importantly, technology implementation can be a burden to teachers when it is a top-down requirement. According to Charlene, the facility school provides is not user friendly and unreliable. Unreliable equipment cannot facilitate teachers’ instruction; on the contrary, it overwhelms teachers when the use of computer technology becomes a requirement. However, teachers are still forced to use unreliable equipment because technology implementation has become a selling point for the school to gain credentials during the MOE evaluation process. Given the fact that technology implementation requires a time commitment on training and preparation, fulfilling a top-down requirement apparently becomes a huge burden to teachers because they still have the issues of heavy workload, lack of time, and students’ low learning motivation at hand. Therefore, Charlene does not consider technology implementation to contribute as much to ELL teaching and learning as policymakers and administrators have claimed if the current situations in schools are not taken into consideration. As Charlene complains:

“Q:是不是因為這樣子,額外要花時間去熟悉,其實很多老師他乾脆就覺得我還是維持原來的方

A:對阿,就是這樣阿,對阿對阿,就是這樣阿,根本就不好用阿,也沒有幫到老師什麼...我覺得對很多老師是負擔耶,沒錯,是burden耶,因為他不熟悉嘛,再加上他又要花時間去熟悉,然後又要花更多時間去準備,那你覺得會有老師會想用嗎?”

(Charlene_3_01:13:16).

“Q: It is because it requires extra time and efforts to get familiar with the functions so that many teachers prefer to remain their original instructional strategy?”

A: Yes. That’s right. You are so right. It is not useful at all and it doesn’t really give much help to teachers anyway...I even think it is a burden to teachers. Teachers are not familiar with the functions and they need to spend time to get used to it. Besides, teachers will have to spend more time on course preparation if they want to use it. So, do you really think teachers want to use it?” (Charlene_3_01:13:16).

From the above assertion, we know that teachers’ infrequent use of computer technology for pedagogical purposes sometimes has nothing to do with their belief of how much computers can do for ELL teaching and learning. It is in fact, related to the limitation of the tool as well as to the reliability of the equipment schools provide.

Charlene’s Central Concerns Regarding CALL implementation (RQ2)

Research Question 2:

What are ELL teachers’ central concerns regarding technology implementation for instructional purposes?

The analysis indicates that five items summarize Charlene’s central concerns regarding technology implementation for instructional purposes.

1. Lack of funding (results in unreliable equipment, insufficient training, poor computer literacy, large class size).
2. Requires more time commitment.
3. Cosmetic compliance to the top-down requirement and teachers’ voices are neglected.
4. Computer technology does not fit the nature of ELL.
5. Plagiarism.

Elaboration of Point #1

Charlene’s central concerns regarding the top down decision of technology implementation are the unreliable equipment the school provides, the insufficient professional training the school offers, her limited computer literacy, and large class size. These four central

concerns all result from the lack of funding.

Without sufficient funding, Charlene complains that the facilities the school provides are of poor quality. To fulfill the requirement of technology implementation, the school has to purchase cheaper and less reliable equipment because technology just has to be there. Sometimes the hardware is unreliable and cannot support the software teachers intend to use. As Charlene complains:

“就為了貪便宜,這個東西跟這個買,那個東西跟那個買,然後又互不相容,然後就一直故障一直故障這樣子” (Charlene_3_01:11:10).

“In order to get things on the cheap, the school will purchase one piece of a device from one manufacturer and another piece from other manufacturers. It ended up the devices are incompatible with each other. So, the equipment is often out of order”
(Charlene_3_01:11:10).

Charlene also complains that it is annoying that the equipment breaks down easily and the class will be interrupted. Charlene often feels frustrated once she cannot use the technology-enhanced materials that she has spent time on developing. Due to the problem of insufficient funding, the school cannot provide back-up equipment to teachers when the electrical devices are undergoing regular maintenance. It is even more annoying when the maintenance staff takes the equipment away without noticing teachers in advance. As Charlene complains:

“Q:以你這樣子蠻常使用科技在輔助教學的經驗裡面來看,有哪些事情是你非常大的 concerns?你有遇到什麼困難?”

A:就是有時候教室的設備不支援的時候,我就覺得很煩,就是有時候這個壞那個壞,對,你就覺得,阿,怎麼今天一來投影機整個被拔走了,哈,而且有時候整個禮拜”
(Charlene_3_13:01).

“Q: From your experience of technology implementation, what are your major concerns? Have you encountered any difficulty?”

A: I feel annoyed when the equipment cannot support me. It happens a lot that the equipment breaks down easily. Today is this one and the next day is that one. Sometimes, when you enter the classroom and surprisingly found that the overhead projector is gone. It sometimes can disappear for a whole week” (Charlene_3_13:01).

In addition, Charlene complains that the school cannot provide campus-wide high-speed

internet service because of the lack of funding. Due to the poor service, it costs a lot of class time just to display a webpage. Charlene points out that:

“學校設備也很慢,就是學校設備也不好啦,就他分配給我們的那間電腦教室很爛,常常就是當掉,不然就是下載東西很慢,我們學校網路真的是有夠爛的...我在前面用那台電腦也很慢,也很爛就對了,所以就常浪費時間在那種download的東西”
(Charlene_1_48:35).

“The equipment the school offers is slow and has poor quality. The language lab the school assigns us to use is really bad. The equipment crashes very often. It also takes a lot of time to download a webpage. The internet service on campus is really bad...the desktop computer I use in the language lab also has poor quality. It runs very slowly and doesn't function well. I often will have to waste a lot of time downloading stuff”
(Charlene_1_48:35).

From Charlene's experiences with the unreliable equipment the school offers, we know that the unreliable facility eventually cannot facilitate teachers' instruction. On the other hand, it creates more classroom issues to teachers. This is also one of the reasons that prevents teachers from successful technology implementation.

In addition to the issue of unreliable equipment, the lack of funding also results in an issue of insufficient professional training to faculty regarding technology implementation. The school did offer workshop which focus more on developing and enhancing teachers' computer skills by using the funding received from the Ministry of Education. However, the Ministry of Education cut the funding one year later so that the school cannot continually provide more advanced workshops to teachers. Without sustained funding for technology, the school cannot provide ongoing hands-on training. Charlene points out the difficulty of successful technology implementation in her school:

“去年有卓越計畫的那個教育部的補助金費,那我們學校就是有那個什麼數位教學組阿,然後有什麼資輔處她們就開一系列的課程阿...可是就是只有那個,就一個那個補助,學校的那個卓越計畫的那個補助阿,就是教育部有一筆金費嘛,那之後也就都沒有了” (Charlene_3_48:48~50:15).

“Last year, we received funding from the Ministry of Education because we are awarded

from the “Teaching Excellence Project.” With the money, the Information Technology Center offered a series of workshops to teachers...but after that, there is no any other workshop provided because the Ministry of Education freezes the funding” (Charlene_3_48:48~50:15).

Charlene points out that many teachers have limited computer literacy and therefore have frustrated experiences with technology implementation. Without positive experiences, many teachers prefer their original instructional strategy over incorporating computer technology in their instruction. Besides, without advanced computer skills and background knowledge of technology implementation, teachers’ use of computer technology will be very limited. As Charlene mentions, most of the teachers’ computer literacy level only allows them to use PowerPoint when talking about technology implementation. She says:

“那我們學校好像也沒有很多阿,也不多,我覺得大部分,我覺得很多原因是因為很多老師的,就是在科技運用上面的程度沒有那麼高啦,其實現在我是覺得,很多老師還是停留在,就是僅止於PowerPoint或是什麼的” (Charlene_3_56:42).

“In my school, there are not so many teachers implementing computer technology in their instruction. I think the major reason is because a lot of teachers have poor computer literacy. Many teachers’ level can only allow them to use PowerPoint and that’s it” (Charlene_3_56:42).

From the above assertion, we know that the lack of more advanced professional training on technology implementation causes teachers’ infrequent use and limited use of computer technology for pedagogical purpose.

Charlene also mentions that the key for teachers to determine the use or nonuse of computer technology for pedagogical purposes is based on the assistance, resources and supports the school provides. Given to the current situation of the lack of funding, successfully assisting teachers in the implementation of computer technology for pedagogical purpose seems to be a big challenge. As Charlene mentions, if the school can offer more ongoing professional training programs, it can increase teachers’ willingness to implement computer technology in their

instruction. She says:

“我覺得有時候老師要不要用喔,也是看學校支不支援啦,我覺得如果說學校有比較多的支援的話,我想應該會,像我就覺得很,有很多學校她們就會開很多的那種工作坊,我就覺得還蠻好的,那我們學校我就覺得就比較少” (Charlene_3_01:17:17).

“Teachers’ use or nonuse of computer technology for instructional purpose really depends on the supports the school provides. If the school is more supportive, I believe there will be more teachers using it. I know that many schools offer workshops to their faculty and that’s really good. But, my school does not do that a lot”
(Charlene_3_01:17:17).

Finally, in our informal chatting, Charlene also mentions how the lack of funding interferes with successful technology implementation. Charlene revealed that the school prefers to have teachers instruct a large class because they want to cut down the expenses on faculty salary. Teachers do not have the power to decide the class size. However, large class size makes it challenging for teachers to deliver effective instruction in the language lab. A more traditional lecture-based instruction seems to be more favorable among teachers in order to manage a large class size.

Charlene’s above assertions regarding how the lack of funding impacts the success of technology implementation indicates that when a top-down policy (e.g., technology implementation) is announced without further evaluation of the reality (e.g., large class size), it often brings teachers extra burdens rather than fundamentally solving the problems.

Elaboration of Point #2

In addition to the issues of unreliable equipment, lack of training, limited computer literacy, and large class size, Charlene also mentions that the lack of time is another concern she has for technology implementation. A successful technology implementation for instructional purpose requires more time commitment (comparing with an instruction that simply follows the activities in the textbook) on material development, course preparation and equipment set up.

Part of the reason for more time investment is because currently there is a limited choice of technology-enhanced learning materials on the market. Teachers have to spend time finding the resources and modifying the materials on their own in order to develop materials that fit students' needs and language proficiency level. For efficiency consideration and time concern, it is more time-saving and convenient when teachers' instruction simply relies on textbooks. With the heavy workload coming from teaching, academic research and service, teachers often feel reluctant to devote their time on technology implementation if they can just use textbooks. As Charlene points out:

“我覺得那個真的是蠻花時間的,你不是只是把你的那個內容,你還要有編輯阿,你還要有什麼,對阿,像我自己做的課程網站,其實我都要花蠻多時間的,對阿,因為你要去想你的內容嘛,然後你要去找資料,那其實也花蠻多時間的,就是你要花很多心思去編,那你說老師如果為了要省事,課本拿了就講一講,多省事阿” (Charlene_3_56:42).

“Technology implementation really requires a lot of time commitment. You not only have to do lesson planning but also editing. Take my course website as an example; I have to devote a tremendous amount of time on lesson planning and finding resources. I also have to make a lot of efforts on editing. When time-saving is a big concern, many teachers will just use textbook and go over the lessons and exercises in there. That’s really convenient. Why not doing it” (Charlene_3_56:42).

From Charlene's assertion, we know that even though technology implementation is highly encouraged by the policymakers and administrators, there is little support provided to teachers. Given the fact that the current technology-enhanced learning materials in Taiwan still remain at an immature level, teachers cannot simply adopt the materials as they did when they relied on traditional textbooks for instructional purposes. If more rigorous and sophisticated multimedia-based ELL learning materials can be developed for teachers to adopt, it can save teachers a lot of time and effort. In that case, there will be a greater possibility for teachers to be motivated for technology implementation.

Charlene also mentions that to successfully implement technology for pedagogical

purposes, teachers need to constantly polish their computer skills. It is an ongoing learning process that requires a lot of practice and time investment. In that case, due to the lack of time, technology implementation can be very challenging to teachers who are overloaded with duties. As Charlene mentions, successful technology implementation requires teachers' constant practice and time commitment:

“其實我覺得這種東西要常常去碰...而且那個軟體有時候你真的一段時間不用,你再回去用就是忘光光” (Charlene_3_48:48).

“I think to successfully implement computer technology in instruction requires a lot of practice...especially when it comes to the use of software, you tend to forget how to use it if you don't use it for a while” (Charlene_3_48:48).

Apparently, “time” is a critical factor in successful technology implementation. Given the fact that teachers have been already overloaded with their duties, the above assertion also explains why technology implementation is challenging in schools.

Teachers' limited use of computer technology for instructional purpose also results from the issue of lack of time. Situated in an evaluative context where teachers are often overloaded with teaching, academic research and administrative duties, the sophisticated functions computer technology provides to ELL teaching and learning are still often neglected and avoided by teachers because they are in lack of time to use the functions. The issue of the lack of time often results in teachers' limited use of computer technology for instructional purpose and their minimal compliance to the top-down policy regarding technology implementation. The limited use of computer technology for pedagogical purpose is not related to teachers' distrust of the effectiveness of technology implementation. On the contrary, it is a choice out of having no choice. Charlene's assertion can represent teachers' frustration in that sometimes teachers will have to bend to the reality. Charlene reveals her helplessness regarding the issue of lack of time and says:

“因為我覺得其實,你說應用科技要,我覺得要跟她們有什麼課後的互動,我真的沒有,因為我沒有什麼時間去看她們什麼部落格阿,或者是什麼留言版,跟他留言來留言去阿,就是說因為老師的時間也有限,其實我覺得互動這一塊真的是只有上課,下課之後我就真的沒有辦法”(Charlene_3_38:53).

“I believe that to bring technology into full play requires teachers’ time devotion on having more interaction with students after school. The problem is that I really don’t have time. I don’t have time to read their post in their blog. I don’t have time to communicate with them by using forum. Teachers really have limited time. I can only have interaction with students in class. I really cannot extend the interaction outside the classroom after school” (Charlene_3_38:53).

Teachers are often blamed for their reluctance to change in terms of technology implementation. However, Charlene’s assertion reveals the fact that teachers are motivated to learn and to adopt innovative instructional strategy. It is the current situations that overwhelms them and places them in a “having no choice” situation. If teachers’ workload can be reduced and sufficient guidance, training and support can be provided, there will be a greater chance for increased rates of technology use among teachers.

Elaboration of Point #3

Another concern Charlene has in terms of technology implementation is related to the school’s cosmetic compliant with the policy of technology implementation. Things the school does are for the purpose of creating records of technology implementation to credentialize itself during the MOE evaluation process. Teachers’ actual use and the impact of technology implementation on ELL teaching and learning are not the concern of the school. For the purpose of efficient management, Charlene complains that the school does not give teachers freedom and autonomy regarding the issue of technology implementation. In order to pass the MOE evaluation, the school regulates the number of course materials uploaded to a particular online platform that the schools offered in response to the requirement of technology implementation in the MOE evaluation. Uploading teaching materials to other online platform is not considered as a

fulfillment of the requirement. Charlene feels overwhelmed with this inflexible requirement for two reasons. First, the online platform is not user friendly at all and therefore causes teachers extra burden. The complexity of the tool the school provides makes technology implementation less desirable. As Charlene complains:

“就覺得很煩阿,就是,我就覺得我有自己的course website,我幹麻用它的?就是覺得你用它的你還要,我覺得不好用啦,就是我用得不習慣,就是整個操作介面很複雜” (Charlene_2_40:44).

“I really feel it’s annoying and overwhelming. I have my own course website. Why should I use it instead of my own? It is not user friendly at all. I can’t get used to it. The interface is way too complicated” (Charlene_2_40:44).

Second, Charlene has created her own course website and has her teaching materials uploaded before the requirement of technology implementation was enforced. Therefore, Charlene believes that it is meaningless for her to do the same thing twice merely for the purpose of fulfilling an inflexible top-down requirement. Charlene complains that:

“可是我是覺得,我就覺得我有我自己的課程網站,我幹麻用,而且為什麼要規定我一定要用這個” (Charlene_2_43:18).

“But I have my own course website, why should I use the one the school creates for us. Why does the school make it as a requirement and regulate me to use it?” (Charlene_2_43:18).

On one hand, the above assertions reveal a fact that the requirement of uploading course materials to a particular online platform is for the sake of efficient management. The school can therefore easily present a unified record of technology implementation to the MOE evaluation committee members. On the other hand, the inflexible requirement demonstrates that the actual implementation of technology is never of the concern of the school. It is just in compliance to the top-down evaluation policy.

To further elaborate why technology implementation is a cosmetic compliance to the top-down policy, we can investigate what the school actually does in terms of technology

implementation. From Charlene's assertion, we can find that technology implementation is used as a bargaining chip to assist the school to pass the MOE evaluation rather than aiming at solving the educational issues in the school context. For instance, Charlene believes that the inflexible requirement of uploading materials online is set only for helping the school to manage teachers, to have a record of technology implementation, and to show the Ministry of Education the effectiveness of technology implementation. Worst of all, as long as teachers upload the materials to that particular platform and the school can show the record to the Ministry of Education, teachers' actual usage rate, how they use it, what it is used for, and whether the online information is updated are never the concerns of the school. Charlene points out that technology implementation is therefore in compliance to the top-down policy:

“Q:它有規定量,那它有規定在意你後續有沒有去update這個東西?

A:沒有,哈,就是做個樣子,就是很多都是表面功夫啦,你知道嗎?” (Charlene_2_43:18).

“Q: The school have requested teachers to upload a particular amount of course materials online. But, do they care about whether teachers update the information or not?

A: Of course not. Ha. See, they are making a fine show only. Everything is so superficial, you know” (Charlene_2_43:18).

Even when teachers express their concerns of the requirement of uploading course materials and complain the complexity of the assigned online platform, the school ignores teachers' opinions and still requests teachers to fulfill the requirement. As Charlene mentions, to successfully pass the MOE evaluation, the school has to meet the standard of the rate of usage and this is what the school cares about the most:

“我覺得不好用啦,那很多老師也都反應說不會想去用那個東西阿,那可是學校就會要求,就是說教育部規定說什麼現在課程要數位化,那希望就是說學校能夠說那個課程資料就是upload到那個平台的話,什麼要達到幾個percentage這樣子,所以現在就是要求說,就是硬性規定,就是真的是硬性規定,因為我們老師一定要比如說上傳三科的東西到那個網站上面,恩,到那個平台上面” (Charlene_2_40:44).

“It is not user friendly at all. Many teachers also express that they don't want to use it. But the school still requires us to use it. The school said that the Ministry of Education is

promoting technology-enhanced learning now. So, they are hoping the school can upload course materials online. It needs to reach a certain percentage of the usage rate as well. So, to achieve this goal, the school begins to regulate teachers to upload our course materials to that platform for at least three courses. It becomes a mandate now” (Charlene_2_40:44).

Apparently, both the school and the Ministry of Education use the total amount of usage as an indicator to determine the success of technology implementation and the effectiveness of teachers’ performance. However, they completely ignore how teachers use computer technology, what it is used for and other aspects of the contextual problems. This inevitably turns the MOE evaluation into an invalid system and reinforces the schools’ cutting corner behaviors in facing the issue of survival.

Another example is that the administrative staff is in charge of the purchase of the hardware and software and teachers’ opinions are never consulted. As long as there are innovative devices sitting in the classroom as a proof of technology implementation, the school can at least by credentializing itself by meeting the minimal requirement of technology implementation. Therefore, given to the fact there is a shortage of funding, the quality of the equipment will be poor, the equipment tends not to be user friendly and does not fit teachers’ needs. Charlene complains that teachers’ voices were left out during the decision process and she says:

“我們就覺得很wonder的就是為什麼從頭到尾,這個兩間教室的整個,就是從整個設計到最後,怎麼都沒有老師加入呢?那你怎麼知道老師的需求在哪裡...我們都覺得很ridiculous就是,都沒有徵詢老師的意見” (Charlene_3_01:09:53).

“We wonder why teachers’ opinions were never consulted from beginning to end when they design and build that two language labs. How can you know teachers’ needs then? We all feel it is so ridiculous for leaving out teachers’ opinions” (Charlene_3_01:09:53).

Charlene’s assertion reveals that when the usability and adoptability of the equipment is not of concern to the school, purchasing equipment becomes a cosmetic compliance to the top-

down policy. This cosmetic compliance often leads to a fact that computers sit idle in the classroom while the school claims that they have “successful” technology implementation.

From the above two examples, technology implementation is apparently just a selling point for the school to gain credentials during the MOE evaluation process. It is a profit-oriented act rather than an act aiming at ensuring a high quality of education.

Elaboration of Point #4

Charlene points out that technology-enhanced learning (the use of computer-based learning materials) is not necessary appropriate for ELL because ELL can only be successfully and effectively acquired through a face-to-face interaction. According to Charlene, virtual learning environment fails to provide a context for face-to-face interaction. Take distance education as an example, Charlene doubts the effectiveness of distance education (courses are delivered through the online platform and students’ academic performance is evaluated through the online test) because it is in lack of face-to-face interaction which is considered by Charlene as a significant element in ELL acquisition. Charlene questions the effectiveness of e-Learning on the acquisition of a foreign language and argues that e-Learning does not foster interaction.

Charlene says:

“那現在教育部就是一一直很提倡就是說我們要把我們的東西教材數位化阿,那我會覺得這樣子,就是一定是就是數位教材比較好嗎?那在教室都不一定聽了,那你在教室都至少還有face-to-face,至少還有一些互動,對不對...那我覺得是看課啦,看課啦,那有些課比如說語言的課程,它就是要很多的口語的練習,或是聽阿,就是說老師的一些示範嘛,對不對,那我就覺得是沒有很適合在語言相關的課程” (Charlene_3_50:15).

“The Ministry of Education highly promotes distance education and technology-enhanced learning. I really wonder if its effectiveness on teaching and learning can become better. I mean, students are not necessarily interested in learning when they sit in the classroom. Let alone...at least we have face-to-face interaction when classes are instructed in the classroom. I think it really depends on the nature of the course. If it’s a conversation class that requires a lot of oral practices, teachers need to demonstrate how to do it. For that kind of course, distance education is not a good idea”
(Charlene_3_50:15).

In addition to the lack of the capacity to foster interaction, Charlene believes that multimedia-based learning materials cannot be customized to fit the needs of individual learners at different language proficiency level. According to Charlene, computer-based learning materials are only suitable for courses that aim at transmitting systematic and factual knowledge because the materials can still be used over time once they are developed. However, the lesson plans for ELL classes should be tentative, flexible and individualized. The content should be constantly modified based on students' level, needs and interests so that it is hard to be pre-designed. As Charlene points out:

“我覺得語言的東西,上課的互動很重要阿,而且有時候學生的程度不一樣,對不對,學生的狀況不一樣,你可能就要用不同的東西來上,不同的內容,不同的教學方式...固定的東西,我覺得可以做數位教材,可是我覺得那種你很強調那個溝通,很強調那個互動,我就覺得就沒有辦法” (Charlene_3_01:00:23).

“If the course involves language learning, the interaction between teachers and students becomes very important. Besides, students' language proficiency level and their needs are different. So, you'll have to use different materials and different instructional strategy to help them to learn....If the course aims at teaching students something fixed and systematic, computer-based learning materials can be effective. But if the course emphasizes on communication and interaction, technology-enhanced learning is not a good approach” (Charlene_3_01:00:23).

The above assertion indicates that if efficiency and time investment are taken into consideration, it is impossible for teachers to develop multimedia-based learning materials for every course they instruct. Given the fact that ELL courses requires constant modification of the course materials, the development of computer-based learning materials and the use of them in every course will certainly become an extra burden to teachers who have been overwhelmed by heavy workload.

Elaboration of Point #5

Another challenge Charlene encounters regarding technology implementation is the issue

of students' cheating behavior through plagiarism. Students sometimes will plagiarize others' work because they have easy access to the online resources. As Charlene complains:

“因為現在網際網路很發達,就會有這樣子的,老師就會有這樣子的一個concern,就是抄襲會比較嚴重”(Charlene_3_32:45).

“The Internet is so popular and well-developed now. But teachers' concern is that it makes the issue of plagiarism even worse” (Charlene_3_32:45).

In addition to the issue of plagiarism, Charlene also points out that students tend to rely on translation software rather than doing the assignment on their own. Technology becomes a tool to facilitate students' corner cutting behaviors in learning. In this case, technology can be an obstacle rather than a facilitator for students' learning. As Charlene mentions:

“你就會發現很多學生很懶惰,比如說,我會給她們作業就是,比如說英翻中或是中翻英,然後他就會用一些翻譯軟體,然後翻得真的是,我就一看就知道她不是她自己翻,是翻譯軟體翻的...那些東西平常你教給她們是希望說能夠幫助她們阿,可是變成就是說她就利用那些東西來偷懶”(Charlene_3_23:51).

“I found that many students become lazy because computer technology is well-developed. For example, if the assignment is about Chinese-English or English-Chinese translation, many students use computer software to do the homework assignment for them. With the assignment students handed in, I can immediately recognize that the translation is done by the translation software. It is so obvious...When I introduce the software to students, I was originally hoping that it can assist students in ELL learning. But now, students are using it to get lazy” (Charlene_3_23:51).

From Charlene's central concerns regarding technology implementation, we can find that technology implementation is never a guarantee for successful ELL instruction. It really depends on the objective of the courses, how teachers use it and what it is used for. We can also say that the ingredients for successful technology implementation should be an integration of advanced computer literacy, sufficient time investment, constant practice, adequate supports, and an appropriate policy rather than a top-down policy that situates teachers in a sink-or-swim position. Most important of all, teachers' autonomy regarding their instructional strategy should also be

respected. Since technology implementation is not the answer to many pedagogical issues happened in a real classroom, we should respect teachers' profession and their decisions regarding their instructional strategy and the tools being used.

Actions

Technology Implementation Actions (RQ 3)

Research Question 3:

What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?

The analysis indicates that three items summarize Charlene's patterns of action in response to top-down decisions regarding technology implementation in her context.

1. Charlene bends to the reality (minimal compliance).
2. Charlene prepares back-up lesson plans.
3. Charlene asks for more professional training regarding technology implementation.

Elaboration of Point #1

Before the top-down decision of technology implementation is announced by the Ministry of Education, Charlene has been incorporated computer technology in her instruction for a few years. As an innovator of technology use in the field of ELL, Charlene's current instructional strategy is not impacted too much by the top-down policy. However, for the consideration of efficiency, the school carries out blind obedience to the top-down policy without proposing a rigorous plan regarding technology implementation. Due to the school's indiscreet attitude toward technology implementation, teachers are often requested to do things that are considered unnecessary and a waste of time. Without having an actual power for decision-making, teachers can only be self-comforting, resign themselves to, and have nominal compliance in response to the top-down policy since they are situated in an evaluative context. Teachers complain and fulfill minimal requirements but do not fight against the top-down policy even if they are unfairly treated. As Charlene mentions, teachers can always get around the

loopholes in response to a top-down requirement that they perceive inappropriate. She says:

“那現在當然就是上有政策下有對策嘛,道高一呎魔高一丈阿” (Charlene_2_59:58).

“You know, the higher ups have policies while the lower downs have their own ways of getting around them. While the priest climbs a post, the devil climbs ten”
(Charlene_2_59:58).

There is no teacher union for teachers in higher education in Taiwan. Therefore, unlike teachers in the United States, teachers in the higher education system in Taiwan do not benefit from the teacher union system that represents teachers and speaks up for teachers' rights and welfare. From Charlene's above assertion, we can find that teachers do not have a space to have their voices heard when inappropriate top-down policies are executed. When teachers are disempowered, getting around the loopholes in response to inappropriate policies seems to be an inevitable act for the sake of surviving.

Elaboration of Point #2

One of the major concerns Charlene encounters with technology implementation is the unreliable equipment the school offers. In dealing with the problem of unreliability, Charlene always prepares a back-up lesson plan. Since Charlene always has alternative lesson plans at hand, it will not interfere her class when technical problems occurred. Charlene mentions how she deals with the breakdown of the website she intends to use as part of her teaching materials.

She says:

“其實我常常準備的東西就是上課都教不完,我都會多準備...所以我覺得這個問題對我來講是還ok,比如說這個網站,ㄟ,不行,那沒關係,我換個東西來講,對對對,這方面我是還好啦” (Charlene_3_34:28).

“The fact is that I always prepare more than what I can finish within one class session....So, this is not a problem to me. For example, if one particular website cannot be found, that's fine. I always have something else to talk about. So, this is not an issue to me” (Charlene_3_34:28).

From the above assertion, we know that Charlene is always well-prepared for the

mechanical problems and have alternative plans for the lessons. In the field of ELL, “always have a plan B” is the rule of thumb that pre-service teachers learn from their training. Having this idea in mind and putting it into her daily practice enables Charlene to successfully deal with the problem of unreliability of the equipment. Apparently, Charlene does not need to make additional efforts in dealing with technical problems since “having plan B” is what she has been doing for her classes. Technology implementation therefore, is less of a burden to Charlene.

Elaboration of Point #3

When Charlene is asked to provide suggestions in terms of how the school should assist teachers in the implementation of computer technology for pedagogical purposes, Charlene points out an urgent need of professional training in three different aspects. They include more advanced training in computer skills, more information about the effectiveness of technology implementation and more training in technology implementation strategy. As Charlene mentions:

“我當然就是會很想去學一些技術性的東西,就是如何運用各種不同的軟體去做一些數位教材嘛,那這是一個,另外就是說去探討就是說你,um,要如何去,就是說使用科技,然後把它運用在你教學上面,那它會有什麼效益...或者是說老師他要怎麼運用,還有什麼ideas,他怎麼去運用這些東西,他有設計東西出來有沒有,然後我們去看他怎麼做的” (Charlene_3_01:00:23~01:08:35).

“I really like to learn more technical stuff, like, how to use different software to develop multimedia-based materials. Other than that, um, I’d like to see how to implement technology in teaching and what kind of benefits we can get from it...or show us how other teachers use technology in their class, how do they design the technology-enhanced materials and what kind of new ideas they have” (Charlene_3_01:00:23~01:08:35).

Even though Charlene is a frequent adopter of technology implementation for instructional purposes, she still requests more training on computer literacy as well as implementation strategy. Apparently, the lack of sustained funding for ongoing training is a big issue to the success of technology implementation. Without sufficient, ongoing training and information exchange, it is unrealistic to expect teachers to adopt an innovative instructional

strategy. From Charlene's request, there is an immediate need of ongoing training in terms of technology implementation in school context.

Charlene's Major Themes and Emergent Findings

A Shift of Pedagogical Orientation

The consequence of the misaligned MOE evaluation creates an oppressed context that leads the school's curriculum development and inevitably results in a shift of pedagogical orientation in that students are treated as customers and schools are run like business. For instance, the Ministry of Education will cut down funding or deny grant if students' language proficiency is not improved (by looking at the total number of language proficiency certificate students earn). For survival reason, helping students to gain language proficiency certificates becomes the major endeavor schools pursue. Therefore, schools have to shift the focus of their existing curriculum to be more centralized and test-oriented in order to meet the expectation of the Ministry of Education. This adjustment of curriculum design draws a controversy among the faculty members in this particular school context in that a test-oriented curriculum turns the school into a cram school or language institute where the learning process and the development of students' critical thinking ability are overlooked. However, teach to the test cannot promote learning and this shift of pedagogical paradigm cannot improve the overall education quality, either. While the government claims a guarantee of better education to students via the execution of the MOE evaluation system, served as a monitoring system, the misaligned policies in fact, result in a corruption of the education in Taiwan.

An Oppressed Context

In addition, the misaligned evaluation leads the administrators to run schools like business and their educational objective aims at training qualified employees for the industry.

This shift of educational objective encourages efficiency, profit motive, and goal-orientation. Situated in a top-down evaluative context, teachers are placed at the very bottom of the power structure because their professional opinions are often ignored. Teachers unconsciously follow the policy for survival reasons without putting on a critical lens to view the power inequality and controversy policy. Take Charlene as an example, she believes that there is no harm to include standardized test preparation course as the focus of the curriculum development. Charlene believes that it is beneficial to both students and the school because it not only can prepare students for the future job market but also can help the school to pass the MOE evaluation. When test-taking (an evaluation approach that puts more weights on learning outcomes rather than on learning process) is highly encouraged and teachers are unconsciously positioned as a sales person to promote the inappropriate policy, and when curriculum is designed with a focus on the idea of profit motive, it is found that teachers unconsciously buy into the profit motive system that oppresses them without being aware of it. Apparently, an ideology of “efficiency,” commonly embraced by the industry, has been successfully transferred to and has had great impact on Charlene’s educational philosophy. Putting on a lens of “profit motive” to look at educational issues might indeed encourage efficiency, but there is also a great possibility to sabotage the overall education quality. Besides, Charlene bends to the reality, remains silent, and is obedient in facing the inequality of power relation in the school context where she is situated. From Charlene’s actions, it is found that the MOE evaluation creates an oppressed evaluative context in which little space is allowed for teachers to express and to reflect their opinions. The MOE evaluation also unintentionally reinforces the inequitable power relation in this particular school context. From Charlene’s case, we know that a misaligned, top-down evaluation can disempower teachers. If the evaluation system intends to ensure a better quality of education to

students in Taiwan, we have to a re-examination of the evaluation system and involve teachers in the process of policy-making.

Case #4: Jane

Introduction to the Case

Jane's major in 5-year Junior College in Taiwan was in the field of Wood Science. Her strong enthusiasm on foreign language learning led her to her pursue of her bachelor's degree in English Literature and her pursue of her master degree in the field of TESOL in the States. Upon her graduation from graduate school, she returned back to Taiwan and taught English to college level students for 4 years. Courses she had been teaching include Listening, Speaking, Reading, Writing, Grammar, Translation, Literature, TESOL, GEPT, Business English, and Journalism English.

Jane's teaching philosophy regarding ELL teaching and learning reveals that she values students' ability of collaborative learning and their attitude toward learning. Therefore, integrating group projects and teamwork in her lessons becomes a distinguishing feature of Jane's curriculum planning. Through teamwork, it promotes students' positive attitude toward learning and encourages student responsibility for learning. It also offers students opportunities to foster their interpersonal relationship, social interaction skills and oral communication skills. In addition, Jane prioritizes students' learning process rather than students' learning outcome. Students' attitude toward learning is weighted more when it comes to the evaluation of academic performance. This is because Jane perceives students' learning attitude as a major factor to determine their capacity of successfully surviving in the highly competitive workplace. Since in Taiwan, "hardworking" is often considered as one of the most important qualities individuals should have in both academic setting and workplace, students' efforts on learning and how

actively they engage in the learning process are used by Jane to judge students' achievement in learning.

Jane mentions that the student population she interacts with has serious problems of poor academic achievement, low learning motivation, and low self-efficacy. Jane interacts with a group of students who are completely lost when talking about their plan for the future. Given to the situation that students are at loose end of the future, it makes it even more difficult for students to have intrinsic motivation in learning. Besides, it is found that students' low learning motivation results from their profit-oriented philosophy of life. Schooling is no longer attractive to students because what they learned in school cannot assist them to achieve the goal of money making. Therefore, an endeavor of increasing students' interests in learning, to rectify their inappropriate learning attitude and to adjust the existing lesson plans to meet the needs of students has been pursued over the past few years in Jane's teaching career.

In response to students' poor academic achievement, Jane lowers her expectations of students' academic capacity. The acquisition of basic skills (e.g., reading, listening and speaking) of the target language is the only expectation Jane has on her students. As Jane mentions, working with students whose language proficiencies are at the beginning levels, the ultimate goal of her lessons is to assist students to acquire survival English so that they can make their messages come across in their daily life communication if English has to be used.

Four approaches are adopted by Jane in dealing with the problem of students' low learning motivation. Jane's coping strategies include a carrot-and-stick approach, engaging students in the learning process, developing a market-oriented lesson plan, and the offer of student consoling service. Jane adopts the carrot-and-stick approach to promote students' interest in learning. In one hand, Jane provides students with counseling service, encourages them and

helps students to build self-confidence. On the other hand, Jane pressures the students through testing (e.g., pop quiz). According to Jane, with the pressure of testing, students will be forced to study. The test score can also immediately help both teacher and students to see the area needed to be improved and demonstrate the efforts students put in the learning process. In addition to the carrot-and-stick approach, engaging students in the learning process is also considered effective to promote students' motivation in learning. Instead of having students sit passively in the classroom listening to her lectures and then inevitably doze off, Jane perceives note taking as the most efficient approach to keep students focused on the task and to acquire a new concept. Therefore, Jane avoids distributing handouts (with a list of the key points of the content being taught), jotting down the key points on the blackboard and the use of PowerPoint because she wants students to take notes on their own. According to Jane, an overly well-prepared teacher will reinforce students' inertia and their passive attitude toward learning. Another approach Jane takes to promote students' learning motivation is to use a variety of learning resources instead of solely relying on textbooks because textbooks are considered as rigid and enthusiasm killing. In finding remedy for the limitation of textbooks and to ensure what students learned in school is practical, a market-oriented curriculum is developed. Jane perceives a market-oriented curriculum as an effective way to promote students' interests in learning. As the industry currently requires prospective and current employees to acquire language proficiency certificates, Jane integrates the language proficiency test-taking skills in her lessons so that she can prepare her students to meet the needs of the industry. Finally, in addition to adjust the objective of her lesson plans and her instructional strategy, Jane also provides students with counseling sessions to understand each individual students' learning history and learning difficulties. The information is used to assist Jane in the selection of learning materials and in the development of

lesson plans so that the course materials and lessons can fit students' language proficiency level and the needs of the students. Besides, during the consoling sessions, Jane constantly encourages students who have self-efficacy issue in order to build up their self-confidence and to foster their interests in learning.

However, an unexpected consequence and a dilemma occurred after the four approaches are successfully applied by Jane. Students who are motivated and have progress in their learning outcome have a strong intention to transfer to other more prestigious schools for better quality of education. The school will then, lose a considerable amount of student population. The remaining student population is usually a group of students with serious learning problems and that makes it even more challenging for the school to demonstrate a solid record to the Ministry of Education during the evaluation process. This unexpected consequence places Jane in a moral dilemma of what should be weighted more between students' welfare and the school's survival.

In addition to the unexpected consequence, Jane also feels disempowered and it is enthusiasm killing when being situated in a context in which workload is heavy but support and resources are limited. For example, the school burdens teachers with the responsibility of handling "trouble makers" (e.g., students with behaviors of skipping classes). This is because the school is underfunded, under-resourced, and undermanned so that they are incapable of hiring personnel to take care of the misbehaved students. Given to the situation that there is little support in terms of student consoling provided by the school, teachers feel disempowered and frustrated because they perceive student counseling is beyond the scope of their professional capacity. Without providing any assistance, support, and guidance, the school's expectation of teachers' devotion on student consoling and other administrative work creates more workload and burden to teachers. The action Jane takes in response to the heavy workload is to purposively

ignore the students with learning attitude problems for she believes that student consoling is inefficient for misbehaved students. Instead of reporting the misbehaved students to the school and then found that the school will eventually hand the issue back to her, Jane prefers to ignore the requirement of filing the report in hoping to save time and efforts for things she perceives more urgent.

Another dilemma Jane faces is the amplifying causal loop emerged in this particular school context. The founder runs the school like business and treats students as customers. Therefore, many decisions are made out of concern for profit instead of the long-term benefit of students or to ensure a high quality of education. For instance, to remedy the problem of losing the current student population, the school interferes teachers' grading by controlling the number of students teachers can fail each semester. In other words, teachers are forced to lower their grading standard to meet the top-down, misaligned policy. The school's policy in fact, causes an amplifying causal loop because having lower expectations and lower standards tends to cause students' lower learning motivation. Besides, as Jane perceives teaching and learning as a reciprocal relationship in that students' learning motivation will inevitably impact teachers' motivation for teaching, the misaligned policy of grading in fact damages teachers' morale and enthusiasm killing. This misaligned policy also reveals the school's corner cutting strategy and self-deceiving attitude toward the pedagogical and organizational problems emerged in this particular school context. Even though this misaligned policy can immediately ease some of the existing problems in this context, in the long run, it will eventually cause more problems and place the school in a critical position during the MOE evaluation process.

In response to the misaligned policy, the action Jane takes is to be obediently resigned to the misaligned requirement. For instance, to meet the school's expectation of grading, Jane

simply follows the requirement without presenting her objections in a timely manner. Another example is that Jane was assigned to teach courses that are not correspondent with her specialty. Even though Jane perceives this “assignment” as inappropriate and unethical, Jane remains silent, accept the top-down arrangement, and is obedient to the top-down decision. As Jane mentions, there is really nothing she can do about this. It seems like teachers’ silence is an act born of inaction, but Jane’s assertion in fact depicts school as a hierarchical structure that places teachers in a disempowered and oppressed position. Teachers’ silence signifies an ignorance of social justice enacting in the existing educational context in Taiwan and the dialectic interaction is obviously missing between administrators and teachers on the front line. Unlike the union system in the United States, where teachers are presented with a space to reflect, to object, and to voice out their concerns, teachers are oppressed because there is no teacher union for teachers in the higher education system in Taiwan.

Context

Jane is situated in a context in which power inequality is a serious issue. Even though teachers do have the right to propose the courses they want to offer, the actual power is hold by the department secretary in determining who teaches what. In other words, administrative staff can overpower teachers by assigning teachers with courses they don’t like or by arranging an unfriendly course schedule for teachers. The whole process is rather political. In addition, the curriculum development is not determined by the department, but by the president of the board who does not have any education-related background. Two issues come along while administrators overpower the department by taking over the decision making of curriculum development. First of all, it creates a hierarchical structure in which teachers are placed in an oppressed position and are disempowered because their professional opinions are not consulted.

Since teachers are on the front line of education, the overlook of teachers' professional opinions will lead to misaligned policies that are not grounded on the needs of students. The devaluing of teacher expertise will only damage the overall education quality and faculty morale. Second, given to the situation that administrators and educators often have a conflict of interest, value and educational philosophy, teachers will be forced to follow policies that they perceived as misaligned. For example, for surviving the MOE evaluation, everything should be manipulated and sugar coated during the MOE evaluation committee members' visit. Teachers are informed by the school not to reveal the cutting corner approach the school takes and the top-down decision making process to the evaluation committees. Jane can do nothing about the school's corner cutting behaviors but be obedient to the misaligned policy. Teachers therefore, are disempowered when their professional opinions are in conflict with the policy the school executes.

In addition, Jane feels disempowered because the school uses the approach of carrot-and-stick to force teachers to fulfill administrative duties (e.g., student recruitment, community service, etc.) that they perceive as irrelevant to ELL teaching and learning. On one hand, fulfilling administrative duty is a top-down policy and teachers are expected to accomplish the duties without having any assistance and support from the school. On the other hand, teachers will be evaluated by the result of administrative jobs and the school will use annual bonus as a reward or a punishment to force teachers to make efforts on the administrative jobs. When it comes to administrative duties, student recruitment is assigned as the first priority. However, this school has a bad reputation for students' poor academic performance. On top of that, a series of scandals happened in this particular school places the school in an even more disadvantaged position regarding student recruitment. Due to the school's bad reputation and the economic

stagnation (it is a private university and students have to pay higher tuition), the school is less competitive among other schools and the bad reputation makes student recruitment and community service even more difficult. According to Jane, current students feel ashamed to be members of the school and expected students have little desire to enroll unless they have no other choice. Recruiting students therefore, becomes a major challenge and concern for teachers in this school. While teachers perceive the fulfillment of administrative jobs not as their obligation, being punished for their poor performance regarding administrative duties reinforces their distrust and hostile attitude toward the school. Besides, both teachers and students feel frustrated and discouraged because the school cannot acknowledge their efforts on community service and students' achievement of learning. For example, the administrator did not attend students' end-of-the-year performance evaluation event even when he was invited to. He simply demands and expects a report of positive results from teachers and students. Jane complains that the administrator portrays himself as an authoritative figure instead of a supportive informant or a mentor. His top-down evaluative attitude and the business-model thinking pattern (e.g., aims at outcome and efficiency) cause more tension among faculty, students and the school. In other words, the school's indifferent attitude not only reinforces the problem of hierarchy but also damages the overall morale among teachers and students.

As Jane mentioned, the school is facing a big challenge of passing the MOE evaluation because there are serious problems of the organizational structure in this particular school context. To expand the school's capacity of meeting the MOE evaluation standard, the school tries to recruit faculty members with a doctoral degree obtained from a foreign educational institution. However, many faculty members' specialty does not meet the needs of the department. According to Jane, faculty members whose major are in a field other than ELL were

hired and positioned in the Applied English Department simply because their degree was gained in an English-speaking country. Besides, incapable faculty members are hired because the issue of lobby was involved in the faculty recruitment process. This misaligned remedy certainly will damage the overall education quality and the morale among faculty and students. It also reinforces the current faculty members' intention of job-hopping and students' strong desire of transferring.

In addition, Jane points out that the president of the board has the intention to close the Applied English Department so that he makes things difficult for the department regarding curriculum planning and student recruitment. Having a business model thinking pattern, the president of the board has low expectations of the Applied English Department in passing the Ministry of Education evaluation so that closing the department seemed to be the most economically beneficial method to the school in dealing with this issue. The goal is to reach efficiency and to maintain profit. Better education quality is never of the interest of the school as it is claimed in the reports submitted to the Ministry of Education. According to Jane, the school purposely neglects the welfare of teachers and staff. This is a tactic the school uses to sugarcoat the act of forcing teachers and staff to resign. The school's purposive neglect and passive-aggressive attitude certainly damages faculty morale and reduces the teachers' voluntary involvement in teaching, academic research, service and administrative duties.

Furthermore, as the amount of faculty's academic research is used as a criterion to evaluate teachers' capability of providing high quality of education to students, teachers have a sense that the MOE evaluation is shifting their focus from teaching and students service to academic research. This is considered as problematic, idealistic, and misaligned because students in the system of College of Technology have serious problems of learning motivation and self-

confidence. Those students require more attention and special assistance from teachers. However, since the MOE evaluation puts more weight on faculty's performance on publications, teachers feel that if they spend more time on teaching and students service, they will fail the teacher evaluation. In this case, teachers are forced to do things they perceive as less irrelevant and less beneficial to meet the needs of the student population they interact with. They also feel that their efforts and devotion on students cannot be fairly acknowledged. Therefore, the MOE evaluation unintentionally becomes a punitive structure and creates an oppressive context that damages school structure and teacher morale. The MOE evaluation also unintentionally becomes the main reason that causes the conflict between teachers and administrators.

Besides, there is an amplifying causal loop happening in this particular context that reflects the organizational problems needed to be resolved. For example, on top of the requirement of teaching, academic research, and service, the issue of the organizational structure also results in teachers' heavy workload. This is because the school was underfunded by the government because of students' poor academic performance and the school's failure in passing the MOE evaluation. Without sufficient money, the school cannot hire staff to deal with administrative work and to assist students with special needs (e.g., learning attitude issue, depression, and other emotional problems). The lack of human resources will eventually cause teachers' heavy workload because teachers will have to take over the administrative duties and the responsibility of student counseling. The heavy workload will inhibit teachers from fully concentrate on ELL teaching and learning. Then the school will fail to provide a high quality of education to students. Apparently, there is an amplifying causal loop happening in this particular school context. This amplifying causal loop in fact, reduces the school's capacity to meet the MOE evaluation standard and inevitably places the school in a critical position during the MOE

evaluation process.

Apparently, the organizational problems and the school's misaligned policies in response to the MOE evaluation situate teachers in this particular context in a disempowered position. The misaligned policies and the amplifying causal loop also sabotage faculty morale and the overall educational quality in this particular school context.

Beliefs

Jane's Perceptions of CALL Implementation (RQ1)

Research Question 1:

What are ELL teachers' perceptions of technology implementation for instructional purposes?

The analysis indicates that six items summarize Jane's perceptions of technology implementation for instructional purposes.

1. Jane believes that technology is a powerful tool for classroom management.
2. Jane perceives technology implementation as programming.
3. Jane perceives technology as entertainment rather than a must-have.
4. Jane perceives computer technology as an unreliable assessment tool.
5. Jane believes that technology can impede learning .
6. Jane believes that technology implementation is a waste of time.

Elaboration of Point #1

When technology implementation is highly encouraged and is brought into the educational setting, based on her limited experiences with computer technology, Jane perceives technology as a powerful tool for classroom management in several aspects. First of all, computer technology is a facilitator when it is used to store, to organize, and to retrieve teaching materials. Besides, it helps teachers to develop portfolio and to visualize their own progress in teaching. As Jane mentions, this is very beneficial to novice teachers in sharpening their instructional strategy and developing their teaching resources in the first few years of their teaching career. As Jane mentions:

“然後還可以建立個人檔案也很好,那種資料夾會比較齊全,才不會這邊一個資料夾,

那邊一個資料夾,然後到最後掉了滿地,然後又要找舊的又要找新的,找不回來,什麼道具都找不到,然後什麼東西又不見,然後自己又可以去做修正,哪裡不對我自己又可以修正,因為每一年教書的methods其實都不一樣,剛開始一定是想不出來什麼,到第二年想出來了,就會多了”(Jane_1_01:25:34).

“It [the use of computers] can also assist teachers in developing portfolio. In that way, materials can be well-organized and well-stored instead of having one file here and another there. And then it turns out that you have all the files all over the place. When you try to retrieve the old files and the new ones at the same time, you can't find them. You will lose a lot of materials if you don't save them in the computer. Besides, I change my teaching methods every year. For the first few years, I might have difficulties developing the most appropriate materials for my students. But as the years go by, there will be more ideas coming out. When the materials are turned into electronic files and are stored in the computers, I can easily track the errors and modify the materials” (Jane_1_01:25:34).

From the above assertion, we know that Jane perceives computer technology as an efficient tool in developing and organizing her teaching materials. Computer technology is used for the purpose of management.

Second, Jane perceives the use of computer technology as time-saving when it comes to classroom management issue. For example, with the use of PowerPoint, teachers can save time on writing on the blackboard and distributing handouts. In other words, the class time will be more efficiently used for instruction and other learning activities. Besides, if students are asked to submit their homework assignments through email or online course management system, collecting assignments and keeping track of students' learning process can be done in a more efficient way. Therefore, with the help of computer technology, teachers can deliver effective instruction, can manage student conduct easily and can save time on housekeeping tasks. Jane is affirmative of the capacity of computer technology for classroom management and she says:

“因為省蠻多方便,因為不用寫黑板,當然是很好,而且講義也省略,對,所以我會覺得很好阿”(Jane_1_01:30:35).

“It [the use of computer technology] is a convenience because I don't have to write on the blackboard anymore. I don't have to distribute printed handouts, either. So, I think it is a good idea” (Jane_1_01:30:35).

From Jane's assertion, we know that the use of PowerPoint is simply for the purpose of efficient classroom management. It is used as a management tool rather than a mediator to change the classroom dynamic, classroom culture, or to facilitate ELL teaching and learning.

Third, computer technology (e.g., PowerPoint) is perceived as a powerful tool to facilitate the demonstration of new concepts. The function of PowerPoint is to assist teachers to "present" new ideas and abstract concepts. According to Jane, the visual representation function of computer technology allows teachers to efficiently and effectively demonstrate a writing sample to the whole class. As Jane mentions:

“如果你打在那種PPT上的話,學生很容易很清楚的看到你現在講的東西是什麼,比如說我教寫作的時候,我會把範文放在上面,然後跟她們這樣一個一個句子這樣解釋,他就會了解句型上的架構是怎樣發展,然後文章又要該怎麼寫,其實很清楚,不用說我在黑板上畫了老半天其實還看不太清楚” (Jane_1_01:23:47).

“If you display the content with the use of PPT [PowerPoint], students can easily capture and visualize the ideas you are trying to convey. For example, when I instruct a writing class, I'll incorporate some writing samples on the slides and explain the sentence structure to students sentence by sentence. Students can understand how to construct a particular sentence structure and the principle of different patterns of compositions. It is much clearer than handwriting on the blackboard” (Jane_1_01:23:47).

Again, from Jane's assertion, we know that the function of computer technology remains at the management level. It is not integrated in the curriculum as a mediator to optimize learning. In this way, even with the use of computer technology, the classroom dynamic remains a teacher-centered, one-way interaction. The teacher is still the authority to deliver knowledge and a lecture-oriented, less-interactive approach is still adopted as the dominant instructional strategy.

In addition to the function of managing, Jane also perceives computer technology as an efficient tool (e.g., the Internet) for information seeking. With this unique capacity of computer technology and its assistance as a search tool, course preparation can be easily done. Therefore, Jane uses computer to assist her in finding supplementary teaching materials for her classes. As

Jane mentions:

“Q:所以這樣overall聽起來,你在教學上會應用到科技的部分會比較屬於兩個方面嘛,一個是屬於找資料

A:對

Q:一個算是做presentation的部分

A:對,就這兩部分” (Jane_2_01:09:46).

“Q: So, overall, your use of computer technology can be divided into two different purposes. One is for searching teaching resources.

A: yes.

Q: The other is for doing presentation.

A: Yes. Only these two purposes” (Jane_2_01:09:46).

Finally, Jane perceives computer technology (e.g., online forums) a platform to enhance the communication between teachers and students. Through the online discussion, teachers can better understand students’ learning difficulties and monitor their learning progress. Discussions can be extended outside the classroom without being restricted to the limited class time. Besides, the online forum is a space for students to reflect on their learning experiences and to contribute what they have known to their peers. Through peer support, intrinsic motivation on learning can be more possibly developed and the idea of collaborative learning can be truly initiated.

Therefore, Jane perceives computer technology as a powerful tool to enhance communication and learning. She says:

“比如說像討論的部分的話,很好,大家可以在上面討論,那萬一你可以告訴我的可能是我哪些部分的教學我可以更改,也可能是我不會的,那你丟問題上來的時候,當下我也許沒辦法幫你解決,可是我可能可以去找資訊出來的時候,對我也是好處,對學生也是一種好處,而且學生又可以討論,然後學生也可以去給訊息” (Jane_1_01:25:34).

“For example, when it comes to discussion, it [online forum] is a good way for open discussion. Students can tell me which part of my instructional approach that I could have been modified. Or when students post a question, I might not be able to solve the problem right away. But I could always look it up and response to them later. In that way, it is beneficial both to me and students. Besides, students can response to each other or share information online” (Jane_1_01:25:34).

From Jane’s above assertion, we know that Jane perceives computer technology as a

powerful tool for classroom management and the delivery of instruction. With the use of the Internet, learning and interaction can also be extended outside the school context.

Elaboration of Point #2

Jane perceives technology implementation as programming. Jane perceives technology implementation and technology-based instruction as an approach that involves programming. It is this perception of “programming” that causes Jane’s technophobia and her reluctance of technology implementation. Jane’s notion clearly indicates that the idea of “integration” is missing and the idea of “technology alone” is embedded when it comes to the issue of technology implementation. Given the fact that Jane has limited knowledge of computer literacy, technology implementation (which is also related to programming by Jane) is beyond her imagination. Therefore, having this misconception in mind, Jane simply gives it up when she needs to do technology implementation. As Jane mentions:

“只要碰電腦的東西就覺得好難喔,只要想到要用電腦,然後感覺它是要設計什麼電腦程式的感覺,我就會覺得那算了”(Jane_1_01:11:22).

“Computer makes everything harder. When it comes to something related to computers, I couldn’t help but connecting it to programming. I’ll say to myself: forget it” (Jane_1_01:11:22).

Jane’s misconception (of relating technology implementation to programming) signifies that teachers are ill-informed and resources are not appropriately shared. Given the fact that teachers’ computer skills are not polished and they are not trained with the knowledge and strategy of technology integration, it is inevitably for teachers to perceive technology implementation as programming and has nothing to do with ELL teaching and learning. Jane further justifies her limited use by claiming that she knows nothing about programming. Jane defines technology implementation as the development of multimedia-based teaching materials rather than the application and integration of computer-mediated resources in her existing

curriculum. She says:

“A:因為那個叫我寫程式我都不會阿,我又沒有學過寫程式

Q:所以說我們講到科技融入教學的部分,你的概念是說老師必須要去製作這些東西

A:對

Q:不是說“應用”

A:不是” (Jane_2_16:17).

“A: It [technology implementation] requires me to do programming. How do I know how to do programming? I’ve never learned it before.

Q: So, when we talk about technology implementation for pedagogical purposes, you perceive it as a process of “developing” a particular teaching material?

A: yes.

Q: not “integrating” an existing technology-enhanced teaching material in your instruction?

A: No” (Jane_2_16:17).

Apparently, it is the idea of programming that causes Jane’s fear of technology implementation. It is Jane’s presumption, misconception and fear that stop her from giving it a try. All of these also demonstrate that Jane is technophobic and is ill-informed of the potential of technology implementation as well as how computer technology can be integrated with the existing curriculum. Technology is not critically used to mediate learning or used to reform the way education is delivered.

Elaboration of Point #3

Jane does not see the relative advantages of technology implementation so that she does not perceive it as a must-have nor a beneficial instructional strategy to ELL teaching and learning. Computer technology is mostly used by Jane of the entry level function to meet the purposes of attracting students’ attention and entertaining students. From Jane’s assertion, it is found that Jane is satisfied with her current instructional strategy. Besides, Jane is not affirmative that technology implementation will have successful impact on ELL teaching and learning. Jane does not believe that computer technology can radically solve the problems she encounters in her daily practice, either. Therefore, there is no urgent need for her to make a change or to learn an

innovative instructional strategy especially considering the potential expenses on the equipment.

As Jane mentions, it does not make sense to spend money on computer technology for

instructional purpose. She says:

“我也不可能把這些東西送到燦坤,請燦坤說你怎麼幫我修改什麼什麼的,那個也要錢阿,我幹麻為了一堂課然後花了好幾百塊,然後去做什麼” (Jane_2_54:51).

“It’s impossible for me to send my laptop to TKEC [a specialty retailer of consumer electronics in Taiwan] and have them install some special software. It’ll cost me money. Why should I spend hundred bucks just for a class” (Jane_2_54:51).

From Jane’s assertion, we know that technology implementation is not perceived as a must-have. Jane’s assertion also reflects that teachers in this particular school context are not supported with resources and equipment when technology implementation becomes a top-down requirement.

Instead of having a belief that technology implementation is beneficial to and a must-have in ELL teaching and learning, Jane perceives technology implementation for instructional purpose as a type of “entertainment.” Computer technology is simply used as a way to liven up a boring school day and to relax teachers from their heavy teaching load. As Jane states:

“它沒有那麼的必須你一定要用到科技來輔助,它只是對老師來講是輕鬆,就上課上來講很明瞭,那學生看了也很好玩...18周大概放個一兩次啦,因為好玩,有時候就是覺得說,ㄟ,累了,想要換一下方式讓她們看電影,我就會放一下一些短集” (Jane_2_55:53).

“I don’t think it is necessary to do technology implementation. The only benefit of implementing technology for instructional purpose is to relax the teacher. It might facilitate teachers to have a clear instruction and make learning fun...for a semester of eighteen weeks; I usually play movies once or twice. I do it only for fun because sometimes I feel tired. I’ll play movie or sitcom then” (Jane_2_55:53).

Jane perceives the purpose of technology implementation is to “entertain” teachers and students; therefore, technology implementation is not a must-have. In addition, Jane does not believe that computer technology can make serious learning happen because of its entertaining feature. In this way, the implementation of computer technology in instruction reinforces

students' low motivation in learning. Students tend to be attracted to the fun part of the multimedia-based materials but care less about learning. As Jane claims:

“因為他很想看完,他不想你用那個東西來上課,因為他其實已經被那個電影吸引了你知道嗎...因為她們後來也被電影迷上了,它其實也變成那種不是所謂的跟你在配合,它變成他在欣賞電影,然後我覺得,那不對阿,你都在欣賞電影,就失去我的教學目的了阿,我嘛知道學生會被吸引,他就愛看阿,你不上課他就說,喔,耶,真好,可是不行阿”(Jane_2_18:03).

“Students are more eager to finish watching the film instead of using part of it as a learning material. They are completely attracted by the film itself, you know...It turns out that students are enjoying the film rather than taking it seriously as part of the curriculum. This is not what I want. If students just watch the film, it is opposite to my original purpose of using film as my teaching material. Of course I know students will be attracted to films and I know they love watching films. If students don't have to be attentive to the lessons, they surely feel extremely excited. But, that's just not right” (Jane_2_18:03).

From Jane's above assertion, we know that it is the entertaining feature that disables teachers from connoting technology implementation with serious learning. Since technology implementation cannot benefit ELL teaching and learning, but will cause more problems to it, teachers will inevitably refuse using it.

Elaboration of Point #4

Jane perceives computer technology as an unreliable tool in ELL teaching and learning. For example, Jane doesn't trust the reliability of computer technology in that it cannot truly demonstrate students' learning outcome if the assessment is done through a computer-based test. When talking about using technology for testing and for in-class activities, Jane believes that technology fails to access to students' actual language proficiency level in that students might not as serious as they are when taking a pencil and paper test. Jane believes that students will randomly click on the answer and teachers will not be able to detect whether students truly understand the concepts being taught. As Jane points out:

“Q:那你覺得科技應用在教學上真的對教學有幫助嗎?就你個人經驗和看法?”

A:我覺得還好而已耶,因為有些東西他其實,比如說好,假設我們設計那種選擇題要讓他回去做,或是什麼的,他其實也可以亂點阿,亂點完那我根本也不知道阿,他是真的會還是假的會,就沒有辦法知道...在我的感覺裡面是這樣想的,所以那我會覺得你根本就是打隨便選擇題選給我的,我認為你沒有認真去想過”(Jane_1_01:12:06).

“Q: Based on your personal experiences with and perception of computer technology, do you think technology implementation is beneficial to your teaching?”

A: Not really. For example, if we design some computer-mediated multiple choice questions and have students complete the assignment at home, they can just randomly fill out the questions without carefully reading it or thinking about it. If students do that, I wouldn't know. I won't be able to know whether students truly acquire the knowledge they are tested on...I incline to think that students won't take it seriously. They'll just randomly pick an answer and hand in the assignment without giving it a serious thought of the test items” (Jane_1_01:12:06).

Jane's assertion implies that technology gives people an impression of “entertainment” rather than something serious. Whenever it is related to computers, people won't be serious about it. This kind of perception inhibits teachers from envisioning the possibility of using computer technology in serious learning.

Elaboration of Point #5

In addition to the “entertaining” feature, Jane believes that computer technology will impede students' learning because it has the feature of “dehumanization.” Jane believes that learning mostly takes place thorough face-to-face interaction in a collaborative learning context. Computer technology will get in the way of students' acquisition of higher order thinking ability because students have less chance to have actual experiences of interacting with peers and hands-on learning experiences when computer technology is used. Therefore, ELL teachers still prefer to assign team projects and group activities that involve more face-to-face interactions and discussions. As Jane points out, actual practice and hands-on learning come first when it comes to learning:

“因為你用高科技在那邊教他,他會覺得很好看阿,有花有什麼很好看阿,看完他還是跟你講他不會阿,因為他沒也實際做練習,他還是不懂”(Jane_2_41:26).

“Of course students will feel that the images are attractive when you incorporate computer technology in your instructions. There will be flowers and other images presented. It certainly looks good. But after watching the visual representations, students will still tell you that they don’t know how to do it because they don’t have an actual practice. Students still won’t get it then” (Jane_2_41:26).

From Jane’s assertion, we know that she perceives computer technology as dehumanizing in that it does not allow students an opportunity to practice and to interact. It does not allow students to take part in the learning process and makes students passive learners. While ELL teaching and learning emphasizes much on the idea of engaging students in an authentic learning environment so that the target language and culture can be acquired via actual practice, the dehumanizing feature of computer technology cannot assist teachers to reach this goal. Jane further elaborates the importance of hands-on learning and how technology can get in the way of it:

“Q:我其實發現好像在英語教學領域裡面,老師她們好像還是比較習慣那種手做的教具耶

A:對阿,就覺得這樣動不是比較..學生比較容易記嗎?那你用科技的東西,就我們剛剛講的,互動力就沒有了阿” (Jane_2_57:00).

“Q: It seems to me that in the field of ELL, teachers are more used to create hand-made props. What do you think about this?

A: Yes. Don’t you think that it will be easier for students to remember it in that way? And if you use computer technology, as we’ve talked about previously, there is no interaction at all” (Jane_2_57:00).

In addition to impeding learning, the dehumanization feature of technology also has negative impact on the classroom dynamic. Jane pictures computer-mediated learning is often initiated by having individual learners working on their own in front of computers. This kind of instructional approach eliminates human interaction and makes the learning process tedious. It will inevitably sabotage students’ interests in learning. As an ELL instructor, Jane sees computers as machines that will create a rigid, dead classroom dynamic. As she mentions:

“我不喜歡,我覺得那是沒感情的,我不愛那種東西,我喜歡看到學生是在那邊打打鬧

鬧” (Jane_2_47:43).

“I don’t like it [technology implementation] at all. I think that is dehumanized. I don’t like that type of instructional strategy. I prefer to see students hectic” (Jane_2_47:43).

From Jane’s assertion, we know that her educational philosophy values classroom dynamic over the use of innovative devices. That is, to Jane, the ultimate goal of education is to create a space for learners to make learning happen through engagement and collaboration with peers. Jane believes that situating students in an interactive environment is the best way to learn. The use or non-use of innovative devices for instructional purposes is not the key; on the contrary, computer technology can impede learning because machines are not alive. According to Jane, technology implementation is enhancing the interaction between the machine and human beings rather than the interaction among individual learners:

“我覺得那是一個很不能跟人之間溝通的東西,就只有學生跟電腦在溝通...就只有學生跟電腦在溝通就沒有互動,互動沒有這麼好,可是有時候我們給學生一張白報紙,然後4,5個人在那邊寫字的時候,她們還會自己覺得很好玩,有人有時候寫太慢還會說,阿,我寫啦,然後有人在那邊..你就會看到人跟人之間的互動好像就很好” (Jane_2_47:12).

“I think it [computer] is something that doesn’t allow human interactions and communications. It only allows students to interact with computers...When students only communicate with computers, to me, it means that there is no interaction at all. Or I should say, the interaction is not so good. But when sometimes I gave students a large piece of paper and have four to five students in a group working together and jotting down their ideas, they had a great time working that way. If one student writes slowly, another will say, come on, let me do it...The dynamic and interaction among students are so great” (Jane_2_47:12).

Another example Jane gives regarding the dehumanizing feature of computer technology is about distance education. Jane points out that if lessons are delivered through the use of computer (e.g., e-Learning), it tends to position students in a passive role of learning because learners are fed with a bunch of assigned readings while immediate assistance, feedback, and face-to-face interaction are absent. Online courses also overlook students’ learning progress because the assessment is usually test-based. In that sense, technology implementation will

impede learning:

“其實我不是很喜歡用e-Learning的部分,因為我還是喜歡那種面對面的教學方式...他們可能只是給他們說一些paper看,你就是看那些paper,然後自己回應,那我覺得在課堂上的話就變成說,老師好像應該比較會給很多的資訊給學生,不是只有給的text的東西而已,那我比較prefer是這種” (Jane_1_01:27:40).

“In fact, I am not a big fan of e-Learning. I prefer face-to-face instruction...They [e-Learning] probably will only assign you some papers to read. You read the paper on your own and do the one-way reflection. But in a “real” classroom, teachers will provide more information to students. What students learn will not be limited to the texts only. I prefer this kind of instructional strategy” (Jane_1_01:27:40).

From Jane’s above assertion, we know that the pitfall of distance education is that there is no dialectical interaction and learning is less likely occurred without social interaction with peers. Besides, materials and activities provided for students through distance education are limited to texts that are in lack of variety. Given the fact that Jane values an interactive classroom dynamic, she certainly does not perceive computer-mediated learning as appropriate for ELL teaching and learning.

Moreover, Jane thinks that the dehumanization feature of computer technology (e.g., e-Learning) makes communication less effective. Jane points out that messages cannot effectively come across through online discussion. Therefore, misunderstandings often occurred when communication is conducted through machine where nonverbal elements (e.g., body language, gestures, posture, eye contact, and facial expressions) are missing and people cannot detect the hidden messages (e.g., emotions) between the words and the lines. Due to this limitation, technology implementation is less of interest of Jane among other instructional strategies. As she mentions:

“我會比較沒有興趣,因為我會覺得像e-Learning是用打字敘述,可是如果是面對面是,即使我這樣講,我相信就算是再怎麼樣比手畫腳或是再怎麼說,一定會可以把事情解決,講得比較清楚,打字其實我覺得不是很清楚,因為我看不出你的表情,我也不知道你現在所傳達給我的訊息到底是什麼,因為字面上很難去理解” (Jane_1_01:29:14).

“I am not so much interested in e-Learning because all the communications are done through text. I think face-to-face communication is much clearer and can make messages come across more effectively because body language helps. But when communications are conducted through typing, I cannot see your facial expressions and I cannot read the messages between lines. We’ll have difficulties understanding each other because sometimes it’s just too hard to decode the words” (Jane_1_01:29:14).

From all the examples Jane gave, we know that Jane perceives computer technology as dehumanizing because it prevents hands-on learning, reduces interaction, has negative impact on classroom dynamic, places learners in a passive role in the learning process, and makes communication less effective. It is this dehumanizing feature of computer technology that makes Jane hesitant toward technology implementation for instructional purposes

Elaboration of Point #6

Since Jane does not see the relative advantages of technology implementation and believes that it has negative impact on learning, she perceives the top-down decision of technology implementation a waste of time. Jane mentions that the requirement of technology implementation is an unfair decision and brings extra burden and problems to her practice. Jane does not think that it is worthwhile for teachers to invest money and efforts on technology implementation for pedagogical purpose because the student population she interacts with is a group of students who presents low interest in learning. As it is previously mentioned that there is a reciprocal relationship between students’ learning motivation and teachers’ morale, Jane thinks that it is unfair if she has to devote time and efforts on technology implementation, an innovative instructional approach that is considered as time-consuming, while the feedback she receives from her students is enthusiasm killing. As Jane asserts:

“我會覺得那種方式對老師來講是一種辛苦,因為老師還要做那些database什麼什麼的,可是輕鬆的是誰,是學生,因為學生到最後根本不需要做任何的筆記...那學生很輕鬆阿,而且他一定是考試前把那個資料download下來,影印然後看看而已,那辛苦的是誰,又是我,我會覺得為什麼不要大家公平起見,我辛苦你也辛苦,就像我在上課我其實

不太愛用黑板,因為我覺得我還要講,我還要寫,我還要洗手,可是我很辛苦耶,可是你們為什麼可以坐在那邊給我睡覺,不寫不動,我不喜歡”(Jane_2_38:51).

“I think technology implementation is a labor-intensive task because teachers will have to create a database that kind of thing. But guess who do the easy job? Students. Because students do not need to take notes...in that way, learning becomes as easy as ABC and they don't need to make efforts. And I bet students will just download the materials, make a copy and review it few days before the exam begins. So, who will have to handle the difficult job? It's me again. Why can't we just be fair? If I have to do the toilsome task, students have to put efforts on it, too. That's why I don't like to write on the blackboard when I'm instructing classes. It is because I have to talk, I have to write and I have to wash my hands. I have to do so many things and why you guys can just sit there falling asleep. You don't write and you don't move. I don't like it” (Jane_2_38:51).

From Jane's above assertion, we can clearly see that unfairness is a factor that causes Jane's resistance to the implementation of computer technology for instructional purpose. Jane does not think that it is rewarding for spending so much time and efforts on technology implementation if it cannot change the classroom dynamic or students' motivation and attitude toward learning.

Jane's Central Concerns Regarding CALL Implementation (RQ2)

Research Question 2:

What are ELL teachers' central concerns regarding technology implementation for instructional purposes?

The analysis indicates that seven items summarize Jane's central concerns regarding technology implementation for instructional purposes. These seven items can be discussed from two different aspects: the instructional level and the systematic level. These two aspects of concerns contribute to Jane's infrequent use of computer technology in her instruction.

1. Instructional level.

- 1.1 Disparity between rich and poor.
- 1.2 Unreliable equipment.
- 1.3 Computer technology impedes learning.

2. Systematic level.

- 2.1 Large class size.
- 2.2 Lack of equipment.
- 2.3 Lack of resources.
- 2.4 Lack of time.

Elaboration of Point #1.1

Even though the existing literature demonstrates that computers have been prevalently used among the young generation, we cannot neglect the fact that technology are not necessary affordable for everyone. According to Jane, one barrier in the promotion of technology implementation is the disparity between rich and poor. Given to the current critical economic conditions, it is more likely for underprivileged students to be marginalized when technology implementation is initiated for pedagogical purposes. As an ELL teacher on the front line, Jane finds it challenging to successfully initiate computer-mediated learning in the real classroom because of poverty. Jane also points out that not every student can afford computers. In that sense, the use of computer technology for ELL learning can be very challenging:

“經濟不好的話,不是每個人都可以有電腦,那你要推向每一個人都走向科技,我覺得太難了...像現在景氣不好的階段,曾經有學生跟你講,老師,我沒有印表機,那你要叫他怎麼辦” (Jane_2_35:48).

“When the economic situation is critical, it is difficult to promote technology implementation because not everyone can afford a computer then...Like right now, the global economy is in depression and I have students came to me saying they don’t even have a printer. How is he going to achieve the requirement if I intend to do computer-based instruction” (Jane_2_35:48).

To Jane, a teacher on the front line, the idea of technology implementation is idealistic because it neglects the real situation in real classrooms. Teachers care more about equal opportunity of learning when they design their lessons and when they make decisions of their instructional strategy. When computer-mediated learning is promoted, teachers are concerned more about whether every student can have the access to the equipment and adequate knowledge of computer literacy because these issues are related to equal opportunity of learning. If technology implementation will get in the way of providing students equal opportunity of learning, it will not be perceived as an appropriate approach for teaching and learning.

Elaboration of Point #1.2

In addition to the equality issue, having unreliable equipment is another major concern Jane has regarding technology implementation. According to Jane, the equipment installed in the language lab is not upgraded, well-maintained and properly repaired. From my on-site observations, I also found that several facilities (e.g., headset, microphone and projector) had broken and had not been repaired for a long time. When teachers have to interact with unreliable equipment or when the use of computer technology for instructional purpose is not convenient to them, teachers often simply give up:

“它有幾台都壞掉了,那導致我們...我連麥克風都還要自己帶,到最後我都不用了,我都省略,我都什麼都沒有” (Jane_1_01:08:38).

“Several headsets in the language lab are broken and this causes [some inconveniences] ...I even have to bring my own microphone to the language lab if I want to use it. Since it is so inconvenient, I'll just skip and I don't use any of it at all. Nothing. I'll use nothing” (Jane_1_01:08:38).

From Jane's above assertion, we know that if technology implementation is a nuisance and cannot assist teachers in teaching, there is no point for them to use.

In addition to the unreliability issue, the lack of sustained technical support is another major concern Jane has in terms of technology implementation. There are times when Jane intends to use the equipment for instructional purpose and she was discouraged because technical problems occurred frequently. Jane complains that the equipment failure interrupts and disrupts her instruction. Students have to sit idly in the classroom waiting for her to resolve the technical problems:

“我就是有一次這樣阿,本來要用作別的文章去告訴學生說,這個範本是怎麼樣怎麼樣,結果後來是那台機器,投影要投上去的那台機器不會弄,然後那台機器有時候還會當掉,燒壞了,今天整堂課的寫作我都不能上,因為資料夾全部在那個隨身硬碟阿,那我根本不能阿,所以最怕的就是完全有時候秀逗的時候...那個流程反而很不順暢,你就要一切很順利,保證它很ok,她要是哪一天當機壞掉,什麼不彈不叫,那你就毀了,我就很怕那個時候” (Jane_2_51:33).

“It happened to me before. I originally planned to project a writing sample to show students how to write a composition. But I don’t know how to use the projector in the language lab so I burned it. Sometimes it just broke down completely so that I cannot initiate my planned instruction. All the materials are saved in the flash drive and I cannot retrieve the data when the machine doesn’t function well. So, what I’m afraid of the most is the time when technical problems occurred....it will affect the flow of my instruction. You have to make sure the machine works well. If the machine breaks down, I am totally screwed up. I’ll be dead when that moment comes” (Jane_2_51:33).

From the above assertion, we know that the interruption of the instruction flow is a big concern to Jane. Since there is no just-in-time and continuous technical support offered by the school, Jane prefers to have minimal use of the facilities (e.g., microphone and portable projector that are borrowed from the department office) when she is assigned to instruct a class in the language lab. Jane further mentions that except for feeling annoyed, she really can do nothing about the technical problems without just-in-time technical support:

“Q:像你剛剛有提到你曾經用過但是遇到technical problem,那你通常都是怎麼解決這個狀況?

A:萬一它真的是燒壞了我就沒辦法阿,那就只能讓它燒在那裡阿...課一樣要照上阿,只是她們看不到material的東西啦,那也沒辦法,那只能說下次印給你們阿,只是上起來就會覺得很不爽阿,因為你已經準備好了...你現在又告訴我說我不能上場演,那我就覺得很火阿...它造成我的困擾阿,那我為什麼要讓自己的課程不順暢”
(Jane_2_54:03).

“Q: You mentioned that you had experiences of having technical problems before. How do you deal with it?

A: I really can do nothing about it. If it breaks down, I can only leave it there...I will just have my class keep going, but not as the way it has been planned out. I won’t be able to show students the material I have prepared. What else can I do? I can only print out the material and give it to them next time. But, you know, I’ll be very piss off because I’ve spent time preparing the lessons...and now I can’t keep the show rolling, of course I’ll be mad. It [technical problem] makes things difficult for me, and why should I interrupt my classes” (Jane_2_54:03).

From Jane’s assertion, we know that technology implementation does not necessary facilitate teaching, it can bring more troubles to teachers’ instruction because of technical problems and the lack of technical support. From my on-site observations, Jane often simply

distributes handouts and relies on the blackboard in order to avoid dealing with the technical problems. Computers installed in the language lab are just a decoration when regular maintenance and continuous technical support is missing.

Elaboration of Point #1.3

Jane's reluctance toward technology implementation comes from her previous negative experiences with computer technology for instructional purpose. Jane mentions that computer technology will impede learning because it tends to reinforce students' passive attitude toward learning, off-task behaviors, and cheating behaviors.

First of all, Jane points out that technology implementation for instructional purposes will reinforce students' passive attitude toward learning. While teachers are asked to post their syllabus and teaching materials online for the purpose of passing the MOE evaluation, students expect that they can always check the online information for the weekly course content and course requirement. Besides, to assist students towards having a full understanding of online information, the computer-mediated instruction is usually depicted in a well-organized way with details provided. Therefore, all of these authorize students a perfect excuse for not paying attention to teachers' instruction in the classroom. Even though the original purpose of posting teaching materials online is to make resources accessible to everyone and to facilitate students' self-directed learning (for those who need to review the course content), an unexpected consequence of reinforcing students' misbehaviors might come along. As Jane complains:

“我當過學生我自己也知道,如果老師用的是電腦的東西,有時候我會放空因為我會覺得沒有關係,等一下我可以再回去抓就好,等一下再看就好,老師在網路上寫東西其實他都會寫得很清楚,那寫得很詳細的,他就像說等一下我再閱讀就好了,拿根筆劃一劃就好了,就可以考試阿”(Jane_2_40:03).

“I was once a student, so I know. If teachers' teaching materials can be found online, sometimes I'll be absent-minded because I always feel that I can download it sometime later. The fact is that the materials posted online usually have clear and detailed

instructions. It makes students feel that they can just review the materials and highlight the key points sometime before the exam begins” (Jane_2_40:03).

Jane’s assertion indicates that students’ passive attitude toward learning sometimes comes from teachers’ over-preparation. If course contents can always be reviewed online and if self-directed learning is good enough, students tend not to have a strong motivation to engage in the in-class learning. Technology-mediated learning, in a way, reinforces students’ passive attitude toward learning.

Second, Jane mentions that instructing classes in language lab where students have easy access to Internet will reinforce students’ off-task behaviors. Even though technology implementation for instructional purpose is used to promote students’ interests in learning, computers and Internet can distract students from focusing on the assigned tasks. According to Jane, one of the reasons that she avoids instructing classes in a language lab and avoids having computer-mediated lessons is because computers tend to cause students’ off-task behaviors. She says:

“在電腦教室讓她們上這些課,她其實會玩起來了,她們不會專心,那個商英會話課也是在電腦教室上,然後每次上電腦,她們其實都是上網阿,其實我們已經收回來了,你沒有辦法開,可是他還是有辦法去搞那些有的沒有的,比如說玩遊戲阿,那我就會覺得那我幹麻要這樣子給你在電腦教室,本來我是給你應用找資料的,她們根本不會去找資料,真的不會找資料,他還是會去找一些別的東西” (Jane_1_01:13:53).

“When having classes in a language lab, students tend to have off-task behaviors and will not be serious about learning. Take my Business English class as an example. It is conducted in a computer lab. Every time when I let students use computers, they are actually surfing the net. Even if I locked their computers and restrict Internet access, they still can do this and that. For example, they are usually on games. Then what’s the point to have classes in computer labs. My original purpose is to have students find resources online, but they will never do it. They will do something else” (Jane_1_01:13:53).

From Jane’s above assertion, we know that teachers are hesitant to use computer technology for pedagogical purpose because there will be more unexpected classroom management issues emerged.

Finally, Jane mentions that it is hard for teachers to detect students' cheating behaviors when computer technology is used as a vehicle for submitting assignment and for evaluating students' academic performance. According to Jane, technology will reinforce students' irresponsible behaviors as students often use "technical problems" as an excuse for not being able to hand in assignments on time. Besides, technology will facilitate students' cheating behaviors and it is most likely happened in online courses. Even though Jane's instruction is not delivered in a virtual learning environment, she is suspicious about the validity of the assessment conducted in online courses because students might not complete the assignments and examinations on their own. It is Jane's distrust of the dehumanizing feature of computer technology that causes her hesitation of incorporating computer technology for pedagogical purposes. Without face-to-face human interactions, teachers will not be able to monitor students' learning process and this will therefore reinforce students' cheating behaviors. As Jane argues:

“你還要求他說在網路上跟你交作業,我跟你講,那個都太難了,他會跟你說,老師,我昨天傳輸線有問題,我沒有辦法傳出去,那你要怎麼辦...我跟你講,大家下次一定都會跟你用這個藉口,那你又不能去判定他是真是假,難道去他家檢查傳輸線嗎?不可能阿,所以科技你說,好,有它的好,可是若夾帶一些說謊話的話,那也很好騙阿,因為我可以找槍手來幫我寫作業吧,你怎麼知道那是他的,就像那個在線上上課,我可以從頭到尾論文都別人寫,你也不知道阿,對阿” (Jane_2_37:15).

“Don't even think about online assignment submission. Let me tell you, that is impossible. Students will tell you, teacher, I couldn't submit my paper on time because my USB cable broke down. In that case, what am I gonna do about it...Let me tell you, everyone will use this as an excuse next time. How could I be sure if he is telling a lie or if it is true? It's impossible for me to go home with him and check. So, there are certainly some potential benefits of technology implementation, but if it involves some lies, students can get away easily, too. Say, they can pay someone else to do the assignment for them. How do teachers know that these assignments are done by their students? It is just like the online courses. I can have someone else write my dissertation from the beginning to the end. No one will know” (Jane_2_37:15).

From all the above examples Jane provides, we know that she is hesitant about technology implementation because technology tend to reinforce students' passive attitude

toward learning, off-task behaviors, and cheating behaviors. In that sense, computer technology cannot promote learning; on the contrary, it will impede learning.

Elaboration of Point #2.1

In addition to the instructional aspect, Jane's central concerns regarding technology implementation are also related to the systematic problems in school context. First of all, large class size is a major reason that makes technology implementation challenging. It is even more challenging for teachers to instruct a large class with mixed-level students when teachers attempt to incorporate computer technology as a vehicle for assessment. For example, designing computer-based tests for a mixed-level class is relatively challenging because it is hard to speculate individual students' language proficiency level. Jane's previous experiences with computer technology tell her that technology has limitations on detecting individual students' errors and their learning difficulties especially when the class size is large. She says:

“我可以在網路上設計database,做選擇題讓他做練習...如果一班5,6個,那我可以抓出來為什麼他錯,他為什麼樣選2,我會問嘛,可是如果你一班是50個的時候,都是低程度的,那你沒有辦法知道那個學生本身的程度在哪裡” (Jane_2_41:26).

“I can create an online database and develop some multiple choice exercises for students to practice...If I only have five to six students, I can easily detect why he chooses item two and why he is wrong because I can ask him. But if it is a large class with fifty beginning level students, it is hard to know the students' proficiency level” (Jane_2_41:26).

Apparently, if the class size is smaller, it would be more likely for teachers to access to individual students' language proficiency level and their learning barriers. It will also be more manageable for teachers to design customized computer-mediated lessons and assessment approach that fit students' needs even if it is a mix-level class. Technology implementation will therefore be more likely to be welcomed by teachers.

In addition to the difficulty of designing appropriate computer-mediated lessons for a large mix-level class, Jane cannot see the relative advantages of technology implementation for

instructional purposes, either. Jane mentions that implementing computer technology in a large mixed-level class does not necessarily facilitate teaching; on the contrary, it will arise some classroom management issues. As Jane mentions:

“A:可以課堂,但是人數要有限,假設10到15個我覺得ok,但是超過15人以上我不認為它可以...我會不知道那個實施的目的在哪裡耶

Q:你覺得老師在manage課上面反而比較不順?

A:對” (Jane_2_01:11:43).

“A: Computer technology can be used in the classroom, but it is all about the class size. I think it is workable if I only have ten to fifteen students in one class. But I don’t think it’s possible to do technology implementation if I have more than fifteen students in one class...It doesn’t make sense to me. What’s the purpose of doing technology implementation then?”

Q: Are you saying that it makes classroom management less effective?”

A: Yes” (Jane_2_01:11:43).

From Jane’s above assertion, we know that she perceives computer technology can be more efficiently used for a smaller class, whereas computer technology is not appropriate for large class and can impede teachers’ efficient instruction. Apparently, large class size is a major reason that makes successful technology implementation less possible.

Elaboration of Point 2.2

In addition to the problem of large class size, insufficient equipment is another problem that causes technology implementation challenging in this particular school context. According to Jane, there is no Internet service in the language lab and there is no cable connection for the desktop computer and projector. From my on-site observation, equipment has been purchased but they are sitting at the corner covered with dust because they are not compatible with each other. As Jane complains, even though she is instructing a class in the language lab, she is not able to use the equipment.

“然後我覺得他不方便的是我們沒辦法用電腦去連接投影機(projector),又沒辦法用那個東西” (Jane_1_01:08:38).

“It really brings inconvenience to my teaching because I cannot connect computers to the projector. So, I cannot use the projector [installed in the language lab]”
(Jane_1_01:08:38).

Apparently, the purchase of the equipment is merely to meet the top-down requirement of technology implementation. The language labs and the equipment are used as a solid evidence to show the Ministry of Education that this school creates “technology-enhanced learning environment” for teachers and students. This cosmetic compliance creates an illusion to fool the policymakers, students and parents that “high-end technical devices” can guarantee high quality of education.

In addition to the incompatible devices, limited availability of equipment also decreases teachers’ desire of technology implementation. According to Jane, teachers have to carry the equipment from one place to another because regular classrooms are not prepared with any technical devices and there is no mobile computer lab for teachers to use. Due to the inconvenience, she is inclined to give up the idea of the use of computer technology for instructional purpose. As Jane mentions:

“做那個PPT的時候講解還比較方便,可是每次都要在語言教室才可以,一般的教室又沒有,又要去攜帶電腦,然後再攜帶投影機,兩台在那邊搞了老半天,然後我就覺得,每次用完一兩次你就覺得算了”(Jane_1_01:08:38).

“It makes it more convenient to instruct a class with the use of PowerPoint. But the problem is that we can only do that in language lab. A regular classroom does not have the equipment. If we want to use it, we have to check out a laptop and a portable projector. It takes a lot of time. After a few times, I will say to myself: forget it”
(Jane_1_01:08:38).

Jane further points out that the objective of technology implementation should be to “facilitate” teachers’ instruction, not to bring them more troubles:

“至少他一定要有足夠的器具給我們,他如果設備不夠齊全,就算我們會基本的,那我也沒有辦法去使用,你要給老師的是方便,不是說我一個人還要帶三台機器再上台一樣,那個我覺得更累,因為有些老師他也是跑來跑去的,那我們有時候也是大概可能跑完這一場,等一下又要跑另外一個教室,那我怎麼可能一個人要帶三台機器然後再跑

到下一個” (Jane_1_01:29:47).

“At least the school has to offer teachers sufficient equipment. If we are in lack of facilities, we won’t be able to use it even if we have basic computer skills. Technology implementation should bring teachers convenience, not that I have to bring three different machines to the classroom every time I want to use it. It brings me more troubles. Some teachers have to instruct classes in different classrooms. Sometimes we have to move to another classroom right after one class, it is really impossible for me to carry three machines while switching classrooms” (Jane_1_01:29:47).

Apparently, if the whole process of technology implementation is enthusiasm-killing and cannot facilitate teachers’ instruction, there is no point for teachers to invest time and effort into technology implementation. Technology implementation will inevitably become a cosmetic compliance whenever it is a top-down requirement. If inadequate equipment continually remains as an unresolved problem, teachers are unwilling to take technology implementation into serious consideration.

Elaboration of Point #2.3

In addition to the lack of equipment, Jane also mentions that one of the major concerns regarding technology implementation is the lack of resources. This can be discussed from three different aspects: 1) lack of professional training, assistance and guidance, 2) lack of knowledge of technology implementation strategy and advanced computer literacy, and 3) lack of just-in-time technical support and regular maintenance.

First of all, technology is not transformative on its own. Successful technology implementation is not simply putting computers in the classroom or connecting every classroom to Internet access; it requires an ongoing professional training, assistance and guidance provided to teachers. However, in our informal conversation, Jane mentions that appropriate coaching for teachers at different skill level is not provided in this particular school context. For example, the school does not offer teachers with any orientation regarding the functions of the equipment installed in the language labs. Teachers will have to either explore it on their own or rely on peer

support (by consulting colleagues who are more familiar with the functions of the equipment).

Given the fact that teachers have been already overwhelmed with heavy workload, teachers often choose not to change their current instructional strategy rather than spending time and efforts on acquiring a new one if there are limited resources and support provided.

Besides, the school does not offer teachers with professional development opportunities regarding technology implementation, either. Jane mentions that the idea of technology implementation was not highlighted when she attended the graduate program:

“所以我完全沒有接觸過什麼電腦的activity,都沒有...我的課表當時沒有,都沒有這個東西” (Jane_1_01:17:53).

“I’ve never involved in any computer-related activity. Never ever...In my graduate courses, it [computer-assisted language learning] is not included in our training” (Jane_1_01:17:53).

Jane further points out that in her graduate training, pre-service ELL teachers are trained to use flash cards or songs as an aid to assist students in acquiring four skills and to engage them in the learning process:

“Q:所以比較多是教具,所謂的教具就是比較手作的實品

A:對,大部分是教具

Q:比較少用電腦的方式去呈現?

A:沒有沒有” (Jane_1_01:17:16).

“Q: So, you use props more. What I meant by “props” is something that is hand-made and an actual thing

A: Yes, most of them are props.

Q: So, you don’t use computers to assist your teaching?

A: No. No” (Jane_1_01:17:16).

Apparently, the approach of using hand-made props created by teachers themselves is commonly introduced in the graduate program in the field of ELL. For that reason, the idea of creating hand-made props (e.g., flash card) is embedded in pre-service teachers’ educational philosophy and has a significant impact on their practice.

From Jane's previous training in the teacher education program, Jane has been wired with the idea of using hand-made props instead of pre-designed computer-mediated learning materials. Therefore, when administrators assume that teachers should know everything about technology implementation once the equipment is purchased and installed, administrators' attitude of leaving teachers "sink or swim" and their ignorance of teachers' need cause teachers' resistance toward technology implementation. Jane feels at loose ends when she is left on her own without having assistance, support and guidance received from the school, especially when technology implementation is a top-down requirement. As Jane mentions her frustration of relying on herself exploring the technical devices and the reason why she stops using it, she says:

“Q:在你以前的受訓經驗裡面,你的TESOL program甚至你的大學,有這方面的東西嗎?

A:沒有,都沒有,都是後來我回來看到廠商給我那個軟體,然後我自己在那邊胡亂用

Q:就自己摸,然後想一想可以怎麼用

A:對對,我都想說ㄟ,這樣弄應該是可以,恩,那樣應該是可以,可是後來搞到說,ㄟ,好像跟自己的課都完全不搭嘎,然後我就再也不用了”(Jane_2_21:44).

“Q: In your previous training, including the graduate TESOL program you attended and your college course, is this [the idea of technology implementation] being introduced?

A: No, never. Not until when I returned back to Taiwan and began my teaching career did I begin to explore it by myself when I saw the software the publisher gave me.

Q: So, you explored the functions by yourself and figured out how it can be integrated in your teaching?

A: Yes. I tried this and that and thought that maybe it will work. But, it turns out that it cannot fit well with my lessons. Then I decided not to use it anymore” (Jane_2_21:44).

From Jane's above assertions, we know that lack of professional training, assistance, and guidance is a major reason that results in teachers' infrequent use of computer technology for instructional purpose because they do not know how to use it.

When the school does not offer sufficient training and assistance to teachers regarding technology implementation, Jane tries to seek guidance within the education community but is very disappointed at her experience. Jane complains that information is not openly shared and people tend to close the door in academia in Taiwan. Jane complains that:

“像你剛剛講的那些科技的東西,當然要有人真的很有心想要告訴大家說他怎麼做,他怎麼樣,可是這不是每個人都願意做的,學術界有一些老師不願意,那你也找不到像類似這樣的職員,比如說萬一你的電腦有問題,或是說你的電腦要人家支援你教你,誰願意教,人家還不是教你去補習”(Jane_2_24:33).

“About the idea of technology implementation, it really needs someone who is warm-hearted and is willing to share how he did it. But the truth is, not everyone is willing to share his experiences. In academia, some teachers are not willing to share their ideas. When I have problems about computers, or when I need someone to teach me and help me to solve some computer-related problems, I can't find any staff member to help me. Who is willing to spend time teaching me? No one. They'll just suggest me to take computer courses somewhere else” (Jane_2_24:33).

Jane further gives another example of how and why people are insecure of sharing information and ideas with others in academia in Taiwan:

A:因為現在的老師...嘖,講明一點,我不覺得現在的老師是那種很願意給東西的人,我曾經聽過有些老師跟我講過說,當你在寫你的論文或什麼的時候,你不能隨便給別人批改

Q:怕被偷idea是不是?

A:對,如果你給,他說你如果同一個系所的,應該是說同一個領域的人批改,他會把你的idea偷走”(Jane_2_27:15).

“A: Nowadays, teachers are...well, to be honest with you, I don't think teachers nowadays are willing to share their ideas with others. I was once warned and advised that “don't let others proofread or correct your dissertation while you are still working on it”.

Q: Is it because they are afraid that their ideas will be stolen then?

A: Exactly. If you give your article to someone who is in the same department or in the same field and ask him for some advices, he will steal your ideas away” (Jane_2_27:15).

From Jane's above assertion, we know that it is this particular Taiwanese academia culture that makes technology implementation even more challenging. Without proper guidance, Jane does not have the access to the computer-mediated learning materials. The lack of information leads Jane to simply assume that the availability of computer-mediated learning materials on the current market is limited. When assistance, guidance, and support from the school, other colleagues, and experts in the field of technology implementation are very limited, teachers often fail to recognize the relative advantages of technology implementation. In other

words, the lack of resources leads to Jane's limited knowledge and expectation of how much technology can do to ELL teaching and learning.

Second, in addition to the problem of the lack of training, assistance, and guidance, teachers' limited knowledge of implementation strategy and computer literacy is also a crucial reason that contributes to the challenge of technology implementation. As Jane points out, she has limited knowledge of "how" to implement technology in her instruction because the strategy of technology implementation is never been introduced to her both in her graduate program and in her entire teaching career. The lack of related knowledge regarding technology implementation strategy not only results in teachers' infrequent use of computer technology for pedagogical purposes but also inevitably restricts teachers' use of computer technology to limited purposes. Jane frankly points out that it is her limited knowledge of technology implementation strategy that causes her infrequent use of computer technology for instructional purposes:

“A:坦白講我覺得應該是我自己經驗不足啦,因為老師自己也必須要經驗足,會去使用這個東西,你才有辦法去使喚學生怎麼去跟你的教學做互動,是因為我沒有使用得很熟

Q:你所謂的經驗不足,指的是哪方面?

A:比如說我不知道怎麼去“應用”這個軟體,放在我的教學上,配合得剛剛好”
(Jane_2_20:07).

“A: To be honest, I think it's because I don't have a lot of experiences in it. If teachers want to successfully implement computer technology in their instructions, they need to be experienced and know how to use the equipment. In that way, teachers can guide students and engage them in the whole process. But I am not so much familiar with computer technology.

Q: When you said that you don't have a lot of experiences, do you refer to any specific aspect?

A: For example, I don't know how to “implement” computer software in my teaching and make them compatible with each other” (Jane_2_20:07).

From Jane's above assertion, we also know that the promotion of technology implementation is not as prevalent as researchers and policymakers have expected. Apparently, trainings regarding technology implementation strategy are missing.

Besides, Jane believes that technology implementation will not be successfully initiated unless both teachers and students reach a certain level of computer literacy. Otherwise, when students have poor computer skills, the role of ELL teachers will be turned into technicians who take the responsibility of delivering knowledge of computer skills and dealing with technical problems. An ELL class will also inevitably switch its focus of the acquisition of language and culture to the focus of the development of computer skills. Jane expresses her concerns of being a computer technician and the reason why she avoids implementing computer technology in her instruction:

“只是說這塊領域等於說學生跟老師都要對電腦的使用方式要很清楚耶,因為假設你的學生不懂怎麼開Excel 跟Word的檔,那我不是瘋了嗎?那我還要教他怎麼開...我覺得兩部分都有困擾阿,第一,連我可能自己就會麻煩...他自己電腦有問題,不是我有問題,那我怎麼去教他,萬一我剛好自己在設計課程,然後電腦有問題,我也不會,我根本不會修理,我也不會救我電腦,那寧願的方式當然不喜歡去用這個,因為這個變成要真的很科技到你對電腦要認知,我們都只懂得開Word 檔跟Excel檔而已阿,可是我不會修理電腦,是我怕如果電腦真的有一天當機的話我要怎麼修,對,是這個問題” (Jane_2_11:34).

“Technology implementation requires both students' and teachers' familiarity with computers. Say, if students don't know how to open an Excel file or a Word file, it will drive me nuts. That means I'll have to teach him how to open the file...It'll bring a lot of troubles to both students and teachers, then. First, it is troublesome to me...if my computer work fine but students' computers do not function well, how am I going to teach him? What if my computer dies on me while I am developing lesson plans, what should I do. I don't even know how to solve the technical problems and how to repair my computer. So, I'd rather avoid using computers. To me, technology implementation is for someone who is really tech-savvy and has advanced computer skill. I only know how to open a Word file and Excel file. I don't know how to repair computers. I am just afraid that what if my computer breaks down someday. How am I going to deal with it? It is this problem that bothers me” (Jane_2_11:34).

In addition to students' level of computer literacy, the level of teachers' computer literacy also plays a crucial role in technology implementation. According to Jane, her limited computer literacy does not allow her to transform her current teaching materials into computer-mediated ones because she is not provided with any training and professional development opportunity regarding computer literacy both in teacher education program and in her current practice. While Jane prefers to develop her own teaching materials rather than to adopt a pre-designed one available on the market, the lack of advanced computer skills results in her infrequent use of computer technology for pedagogical purposes. Due to her limited knowledge of computer literacy, Jane is inclined to give up the idea of "serious" technology implementation and computer technology is simply used in compliance with the top-down policy. Jane complains how her limited computer literacy prevents her from developing computer-mediated materials. She says:

“因為有可能你的教案不是她們現在給的範本可以支援你的,有可能是你自己還要去 create 新的 database, 那我又沒有學過, 我怎麼可能去設計那種網路教材”
(Jane_2_16:57).

“There is a great possibility that the template cannot support your lesson plan so that you'll have to create a new database. The problem is that I've never learned it. How could I know how to design that kind of computer-mediated learning materials”
(Jane_2_16:57).

Jane's above assertion indicates two things. First, Jane is thinking about transforming her existing teaching materials into computer-mediated ones when it comes to technology implementation. To achieve the goal of designing computer-mediated teaching materials, it requires the ability of programming. Since Jane is Technophobia, she is resistant of the idea of technology implementation. Second, teachers are not provided with sufficient trainings to serve their needs when technology implementation is required. Without having the required knowledge and skills, teachers are inclined to avoid implementing computer technology in their instruction.

Third, an essential element for successful technology implementation is continuous technical support and regular maintenance. However, Jane mentions that just-in-time technical support is unavailable. Upgrades and repair are not responsive and well timed in this particular school context, either. From the on-site observation and informal conversations with Jane, I found that the school has a procrastinated attitude toward maintenance and technical support because there are no specific personnel taking care of these issues. While I visited Jane's classes that were instructed in the language lab, I found several devices (e.g., headsets, microphone, projector and DVD players) were out of order. Even if teachers would like to implement technology for instructional purposes, the breakdown of the machine makes it less possible. Without sufficient human resources, sustained technical support and maintenance, the goal of successful technology implementation is hard to be achieved.

The above three major concerns addressed by Jane reveal the real situation in this particular school context in terms of technology implementation. The school does not really care whether the equipment works well or whether teachers are using it or not. In other words, the failure of technology implementation comes from the administrators' cutting corner mindset in that equipment is purchased as a periapt and is used as a decoration for the purpose of meeting the minimal requirement of the MOE evaluation. The actual use of the equipment and how it impacts teaching and learning are never the concerns of the school. Technology implementation is merely a cosmetic compliance for the purpose of surviving the MOE evaluation.

Elaboration of Point 2.4

Given the fact that teachers are overloaded with the duties of teaching, academic research, and service, teachers do not have time for acquiring an innovative instructional strategy. Therefore, the lack of time is a major reason that inhibits Jane from acquiring advanced computer skills, attending professional training and implementing computer technology for

pedagogical purposes even if Jane believes that technology implementation is beneficial to ELL teaching and learning. There are more urgent things for Jane to deal with in her daily practice. To Jane, technology implementation requires more of teachers' efforts and time commitment but its effectiveness on solving the problems she encounters in her daily practice (e.g., problems related to students' learning and organizational issues) is not necessarily satisfactory. Since technology implementation is considered a time-consuming hardship and something that has limited positive feedback and is foreign to her, Jane only fulfills the minimal requirement of technology implementation instead of seriously investing time and efforts on it. As Jane mentions, due to the lack of time, technology implementation is prioritized as low. She says:

“Q:是因為以前有不好的經驗嗎?還是怎麼樣?讓你覺得能不碰就不碰

A:沒有,是覺得自己的時間不夠去學那些,因為覺得自己好像很多書還沒唸完,根本不會去想碰那個” (Jane_1_01:11:48).

“Q: What makes you say that you'd rather no to use computers unless you have to? Is it because you had bad experiences before?”

A: No. It's just that I don't have time to learn. I always feel that there are still so many books for me to read. In that case, technology implementation is absolutely the most unlikely thing that I desire to do” (Jane_1_01:11:48).

From Jane's above assertion, we know that when teachers' workload is not reduced, the implementation of computer technology for instructional purpose is less desirable for teachers. Given the fact that Jane perceives technology implementation requires even more efforts and time commitment, technology implementation cannot solve her existing problem of the lack of time; on the contrary, it will bring more burden to her.

Actions

Technology Implementation Actions (RQ3)

Research Question 3:

What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?

The analysis indicates that three items summarize Jane's patterns of action in response to top-down decisions regarding technology implementation in her context.

1. Jane demonstrates passive attitude toward technology implementation.
2. Jane puts the blame on the school and students.
3. Jane requests training on hands-on computer skills.

Elaboration of Point 1

When Jane found that she has limited knowledge and skills of computer technology, she simply avoided using it and has a passive, procrastinating, and resistant attitude toward the top-down requirement of technology implementation. As previously mentioned that Jane relates technology implementation to programming and it is this perception that causes her technophobia. Jane clearly expresses her strong resistance toward computer technology:

“只是你會很礙於那個感覺說,吼,我還要動那個機器就覺得,很不喜歡(加強聲音)” (Jane_2_52:33).

“You know, I just have a strong irritating feeling that, ugh, why should I have to use the machine. I just so NOT like it (raising her voice with an irritating tone to emphasize her dislike)” (Jane_2_52:33).

Jane further explains the reason why she is so resistant toward the use of computer technology. Jane relates technology implementation to programming. She says,

“那個好像還要寫什麼database什麼的,阿,那算了,不會,因為那個叫我寫程式我都不會阿,我又沒有學過寫程式” (Jane_2_16:17).

“It seems like it [technology implementation] requires me to create a database, something like that. Ugh, forget it. I just can't do it. I don't know how to do programming. I've never learned programming before” (Jane_2_16:17).

In other words, it is Jane's fear, insecurity, and uncertainty of an innovative instructional approach that causes her resistance and infrequent use of computer technology for pedagogical purposes. Jane's resistance and helplessness are amplified especially when she has insufficient guidance and support. Jane avoids anything related to computers because she does not believe she is capable of handling it:

“只要是跟電腦相關的東西,我一般都會儘量能不碰就不碰,那只有那個presentation那部份的PPT,我覺得很簡單我就會去做” (Jane_1_01:11:22).

“As long as it has something to do with computers, I’d rather not to use it unless I need to. Only using PowerPoint to do presentation does it sound more desirable to me because it is easy. As long as it is something not so difficult, I’ll do it” (Jane_1_01:11:22).

Jane’s above assertions demonstrate her passive and procrastinated attitude toward technology implementation. Given the fact that she is technophobic and has inadequate support and assistance, it is not surprising to see her avoidance of the use of computer technology for pedagogical purposes.

Elaboration of Point 2

In addition to demonstrate passive attitude toward technology implementation, Jane also justifies her infrequent use of computer technology for instructional purposes by putting the blame on the school and by being denial. First of all, Jane strongly believes that there is a good reason for her not to use computer technology in her instruction in that the school does not offer sufficient equipment for ELL teachers anyway. Jane complains about the unequal distribution of the resources in this school context and justifies her infrequent use of computer technology by putting the blame on the school. She says:

“Q:比較少用電腦的方式去呈現?

A:沒有沒有

Q:為什麼沒有那樣做?

A:因為學校沒有那樣的軟體,沒有那個器材,你也找不到什麼電腦教室用,人家那個都是資訊課在上,資訊系在上,所以我就沒有用” (Jane_1_01:17:16).

“Q: So, you don’t use computers to assist your teaching?

A: No. No

Q: Why not?

A: It’s because the school does not offer us equipment and software. I can’t even find a computer lab for my class and that’s why I didn’t use it. The computer labs are for teachers and students in the Department of Computer Science” (Jane_1_01:17:16).

Apparently, the lack of equipment is a major reason that causes the failure of technology

implementation. It also reduces teachers' desire of learning an innovative instructional strategy. Without the equipment, there is no point for teachers to invest time on learning something new since they will not be able to adopt it in the future.

Second, Jane rationalizes her infrequent use of computer technology for pedagogical purposes and her justification is grounded in a belief that the use of computer technology among the young generation is not prevalent anyway. As Jane mentions:

“而且學生其實,在我帶來的學生,我會覺得她們使用電腦率的感覺好像也還好,也沒有真的這麼高” (Jane_1_01:12:06).

“I got a sense that my students do not use computers a lot anyway. It seems like the rate of their usage of computers is just ok. Not as high as people have expected anyway”
(Jane_1_01:12:06).

Apparently, Jane justifies her infrequent use of computer technology by putting the blame on her students. However, in our informal conversation about students' low interests in learning, Jane complains that students spend too much time on online chatting, online games and waffling around on the Internet. Apparently, Jane is aware of the students' reliance on computers outside the school context, but she just does not consider students' use of computers as an act relating to serious learning. As much existing research shows, learning occurs outside the classroom via the use of computers among the young generations; therefore, Jane's assumption of students' infrequent use of computers should be considered as her personal misconception and is not based on a solid ground. While later on, Jane confesses to me in our informal conversations that she feels guilty for not spending much time and efforts on course preparation because all her attention goes to the application for her doctoral study abroad. Since technology implementation requires more time commitment, she simply avoids using it. While Jane presents low interest in technology implementation, her assertion of students' infrequent use of computers is considered as a denial behavior and an act of justification for her infrequent use of computer technology for

pedagogical purposes.

Elaboration of Point 3

While Jane perceives barrier in the process of technology implementation in that she is in lack of related knowledge of computer literacy, Jane requests more trainings on advanced, hands-on computer skills. Jane suggests that more workshops regarding the tutorial of web-design should be provided to teachers. Jane mentions that the focus of current available workshops is misaligned with teachers' real needs because most of them aim at promoting teachers' awareness of the importance of technology implementation as well as the relative advantages of technology implementation. As Jane points out:

“它必須告訴我怎麼去製作那個網頁,因為有些workshop根本沒有教你如何製作,是大家在討論它的好處,那我當然知道它有什麼好處阿,但是你要告訴我如何製作阿” (Jane_1_01:26:40).

“You have to tell me how to develop a website. Many workshops only address the potential benefits of technology implementation rather than teaching teachers how to do it. Of course I know it is beneficial to implement computer technology for instructional purposes, but you have to let me know “how to” develop computer-mediated teaching materials” (Jane_1_01:26:40).

To bridge the limitation of current workshops regarding technology implementation, Jane urges that the focus of workshops should move forward to the next step on guiding teachers at different skill levels to acquire more hands-on experiences of the development of multimedia-based teaching materials. As Jane requests:

“A:先教我如何做教材,就是把教材用成科技化的東西,因為這個是我不會,因為那個好像要做database還什麼的

Q:你想要自己做,不是用現有的?

A:不是,我不要用現有的

Q:為什麼

A:因為現有的東西你又不知道我要的idea是什麼” (Jane_2_01:12:23).

“A: You have to teach me how to develop multimedia-based teaching materials. That is, how to transform my current teaching materials into technology-enhanced learning materials. That is something I completely have no idea about. I thought it is relating to

the development of some sort of database.

Q: So, you would like to create your own multimedia-based teaching materials rather than adopting the pre-designed ones that are already available on the market?

A: I don't want the pre-designed ones.

Q: Why not?

A: The materials on the market are not corresponding to what I want to teach to my students. When they design the materials, they don't know what my ideas are"

(Jane_2_01:12:23).

Apparently, Jane prefers to “integrate” computer technology into her current curriculum.

The pre-designed multimedia-based ELL teaching and learning materials on the market cannot serve her needs. Therefore, in response to the top-down requirement of technology

implementation, Jane requests more advanced, hands-on training on computer literacy.

Apparently, simply with the purchase of equipment is not enough for successful technology implementation. A new literacy should also be provided for educators before encouraging them to initiate technology implementation.

Jane's Major Themes and Emergent Findings

Fear and Technophobia

Jane's description regarding the reasons why she is resistant to technology implementation indicates that Jane is a great example of technophobia. Jane's fear of technology implementation predominantly comes from her limited knowledge of computer literacy and her misconception of technology implementation (relating technology implementation to programming). As previously mentioned, the lack of training on computer literacy and technology implementation strategy prevents Jane from transforming her current lesson plans and teaching materials into computer-mediated ones. In addition, given to the situation that there is no technical support provided in this particular school context, Jane's lack of computer skills also intimidates her from using computer technology in her instruction. Jane expresses her fear of and concerns about the technical problems and does not believe she can handle the situation

well all on her own. Finally, due to the lack of background knowledge regarding technology implementation, Jane misconceives technology implementation as programming. It is the idea of programming that reinforces Jane's fear of technology implementation. As Jane perceives potential challenges in the process, it is not surprised to see her presenting a low interest in technology implementation. The following assertion demonstrates Jane's fear of technology implementation and her frustration of being unable to deal with the technical problems. She says:

“那萬一它當機了咧,我最怕就是當機,萬一它當機,我不是死了嗎,那等於就是說我沒辦法了阿,我就在那裡” (Jane_2_51:33).

“What if the computer breaks down? This is what I'm afraid of the most. If the computer crashes, I'll be dead. That means I cannot use it and I don't know what to do then” (Jane_2_51:33).

The above assertion illustrates Jane's technophobia. Jane prefers not to use computer technology in her instruction because she wants to avoid any potential technical problems. Jane's technophobia indicates two things that may have implications for rethinking the current policy of technology implementation. First of all, the accessibility to the new information plays a crucial role in successful technology implementation. New information can be efficiently shared within the teaching community if the systematic problems can be resolved and the culture within Taiwanese academia can be changed. In other words, instead of initiating a top-down policy to force teachers to implement computer technology in their instruction, successful technology implementation will be essentially more feasible by assisting teachers to see the potential benefits of technology implementation and allow them easy access to a variety of teaching resources. Misconception can also be therefore resolved if teachers have easy access to new information. All of these require sustained funding for ongoing hands-on training and a reduction of teachers' heavy workload. It also requires an open space that allows teachers to exchange information and ideas, to reflect, and to gain peer support.

Second, from Jane's assertion, we know that ELL teachers are more familiar with the idea of developing hand-made props. To successfully promote the idea of technology implementation, we must be aware that new knowledge should be introduced based on what teachers have known rather than imposing something foreign to their current instructional strategy. Initiating a top-down policy to force teachers to change their perceptions and practice is apparently not working. Helping teachers to see how they can "integrate" an innovative instructional strategy in their existing lesson planning and develop computer-mediated instructional materials based on teachers' existing knowledge will generate a greater possibility of successful technology implementation.

CHAPTER 5: CROSS CASE ANALYSIS

Introduction

This chapter will explore results from a cross case analysis that compared the cases of Kate, Chen, Charlene, and Jane. The cross case analysis will be discussed and illustrated based on the A-B-C model. The A-B-C model is generated from existing literature and my pilot study and served as the theoretical framework of this study.

Context

The original purpose of the MOE evaluation was to serve as a monitoring system for universities in Taiwan in the hope that a high quality education would be provided to Taiwanese students. However, the data from this study shows that the MOE evaluation is misaligned and regulates inappropriate policies that unintentionally create a dumbing down of the education system in Taiwan. The misalignment of the evaluation results from two factors. First, the MOE evaluation is a top-down credentializing process that excludes teachers' professional opinions. The evaluation criteria, therefore, ignores the reality of bona fide classrooms and becomes idealistic and misaligned. One example of this misalignment discovered in this study is that teachers have heavier workloads *after* these evaluations begin. Teachers have to spend their time on teaching, academic research, and service. However, the data collected and analyzed for this study shows that the requirements of academic research and service in fact distract teachers' attention from teaching. The problem is that the student population in the system of colleges of technology in Taiwan requires more individual assistance and special attention from teachers. Conducting academic research cannot immediately solve the problems of students' learning and motivation. Without including teachers' professional opinions about students' needs, the evaluation criteria become misaligned. The evaluation criteria create a framework for

determining how “good” teaching should be done and what qualified teachers should look like. However, the framework is misaligned and unintentionally shifts teachers’ attention to something that cannot fundamentally benefit ELL teaching and learning. Besides, the MOE evaluation criteria gives too much credit to academic research over teaching and service. While all the participants pointed out that the student population they interact with needs special assistance from teachers, the overemphasis on academic research misaligns the evaluation. Academic research cannot radically or immediately assist students in overcoming their difficulties in learning though policymakers strongly (and erroneously) believe it can.

Second, as the participants in this study pointed out, the MOE evaluation creates standardized criteria for evaluating schools regardless of their individual differences and diverse backgrounds. Teachers believe that the centralized, non-individualized evaluation criteria is misaligned and unfair. Teachers perceive that the MOE evaluation is an unfair system because they are put on the same scale without sharing the same resources. This inequality situates the under-resourced schools in a rather difficult position and reduces the schools’ capacity to meet the standard of the MOE evaluation. This creates an *amplifying causal loop* because once schools fail to pass the evaluation, they will be punished by the Ministry of Education. This punishment involves denying funding to schools deemed as “failing” and reducing the number of students the schools can recruit. Without sufficient funding, it becomes more and more difficult for such schools to pass the evaluation. This *amplifying causal loop* and the *misaligned evaluation criteria* cause teachers to feel that the MOE evaluation is simply a punitive system rather than a constructively critical structure because teachers’ efforts are not properly acknowledged and they are not encouraged or rewarded for what they have achieved. Rather, the evaluation is a way for the government to eliminate “unqualified” schools instead of helping

these schools overcome their difficult situations.

For example, the gap between the perceptions of teachers on the “front line” and policymakers regarding what makes good teaching and what actually benefits students make Kate feel that the MOE evaluation is *punishing* teachers for what they believe to be right. The MOE evaluation system is a *punishing incentive structure* that oppresses teachers on the front line. Arguably, these are the very teachers who should be assisted rather than oppressed by any evaluation or incentive strategy for supporting educational institutions. The punishing incentive structure of the MOE evaluation is, in fact, making the elite schools stronger and the under-resourced, undermanned and underfunded schools less capable of surviving.

Additionally, the MOE evaluation is not necessarily reforming these schools into better places because the actions these schools and these teachers take in response to the evaluation involves “corner-cutting” behaviors such as forgery, sugarcoating the current condition, passive aggression, purposive neglect, and skillfully getting around by way of loopholes. When attention goes to things that are more urgent instead of things that can fundamentally benefit ELL teaching and learning for the purpose of surviving the MOE evaluation, the misaligned evaluation criteria fails to serve its original purpose. On the contrary, it reinforces the *dumbing down* of the education system in Taiwan.

Recruiting students has long been a critical issue in higher education in Taiwan because the declining birth rate has a great impact on the survival of colleges in Taiwan. Colleges now are facing an increasing enrollment gap each year. Schools that are located in rural areas, have limited resources, or that fail to pass the evaluation become the least desirable option for students. The Ministry of Education is developing plans to solve this problem by merging schools and dissolving disqualified schools. The evaluation system was developed to meet this purpose. To

pass the evaluation and to avoid being dissolved or being merged, under-resourced schools also come up with alternative solutions to get around this problem. The MOE evaluation, therefore, becomes a politicized evaluation and a nominal credentializing process. For that reason, the MOE evaluation causes unexpected negative consequences in that administrators tend to run schools like businesses for survival reasons. For schools that are in a financially critical position, they tend to treat students as customers because student tuition is the major financial resources for schools to survive. In order to prevent students from transferring to other schools, the schools will please their current students by lowering the standard of their academic achievement. However, the data of this study shows that lower expectation usually causes lower performance and achievement. Once getting a diploma becomes an easy task without a requirement for genuine effort, the overall education quality decays.

The MOE evaluation system also structures the curriculum development of higher education in Taiwan. For example, for survival reasons, the schools also seek to please the Ministry of Education by shifting their curricular focus to standardized testing. The Ministry of Education evaluates education quality by looking at students' "academic performance." Students' academic performance is based on the number of professional certificates they earn. In order to assist students in getting as many certificates as possible to help the school pass the MOE evaluation, schools offer courses teaching students test-taking skills. Teachers are also encouraged by the schools to include test-taking preparation in their lessons. There is a huge controversy in Taiwan over this shift of curricular focus to this emphasis on standardized testing. This is not welcome by a large group of Taiwanese educational professionals. This is addressed and illustrated in the case of Charlene as she pointed out that there is a huge debate over the appropriateness of the inclusion of standardized test-taking skills in the curriculum. Apparently,

many faculty members believe that overemphasizing test-taking is divorcing students from their inherent passion for learning and is undermining students' creativity and critical thinking ability. A group of educational professionals have endeavored to shift the educational epistemology in Taiwan hoping to shift the classroom culture from teacher-centered to student-centered. The rationale underpinning the promotion of the language proficiency certificate through standardized testing is performance oriented. This is against teachers' educational philosophy since those participants reveal their philosophy is inclined toward Pragmatism (whose major claim is that theory and practice are not separate spheres; theory is an abstraction from direct experiences; truth cannot be understood outside its context) which is considered a departure from the long-existing mechanism of the school structure, curriculum orientation and instructional strategy in Asia. Therefore, this belief becomes the grand theory and is adopted as the rule of thumb among ELL teachers. However, the MOE evaluation's focus on test-taking is like looking backward and embracing an inappropriate old tradition that many educators have endeavored to reverse. It also reflects another unexpected consequence resulting from the MOE evaluation in that it reinforces the hierarchical structure and power inequality in the higher education system in Taiwan. Teachers feel disempowered when they are forced to carry out a policy that they perceive as inappropriate and misaligned. Therefore, teachers not only question the validity of the MOE evaluation, but also reveal that teacher autonomy is seriously neglected.

However, when situated in an evaluative context where workload is heavy, time is limited, class size is large, students are less-motivated, and the top-down policy is misaligned, the approaches teachers take in response to the evaluation can be divided into two different categories. Teachers either unintentionally buy into the system that oppresses them without being aware of it, or they take a passive aggressive attitude toward the system that they consider to be

unfair and misaligned. The latter can be identified in teachers' acts of cosmetic compliance and their procrastinating attitude toward the top-down requirements. Teachers' passive aggressive behavior is the "weapon of the weak" (Scott, 1985) that they use to fight against the misaligned top-down policy when situated in an evaluative context where their specialty, autonomy, and their voices are neglected and they are not provided with a space to reflect, to voice their concerns or to let these messages reach policymakers.

Overall, the misaligned evaluation criteria, in effect, joins with the evaluative pressure context leading to an erosion of teacher autonomy and faculty morale. It also results in schools' corner cutting behaviors (e.g. forgery), cosmetic compliance, and creative neglect/purposive neglect (letting it die; attention going to matters that are more urgent). The original purpose of the MOE evaluation was to reform the schools into better places for students. Sadly, it has unintentionally become a punitive structure that reinforces power struggles among and between the Ministry of Education, schools and teachers.

Beliefs

The reasons why teachers infrequently use computer technology partly come from organizational issues (such as heavy workload, the lack of time and insufficient support) and partly come from teachers' negative perceptions regarding how much computer technology can do for ELL teaching and learning.

Although teachers recognize the relative advantage of technology implementation, most of the positive comments regarding technology implementation fall into the category of technology being a *facilitator* for course preparation and classroom management. Teachers pointed out that computer technology is a powerful tool for searching information and exchanging ideas with other educators. It also helps teachers save time on course preparation and

helps teachers store and organize their teaching materials. In addition to course preparation, teachers also mentioned that computer technology is a powerful tool for promoting students' interests in learning as well as in improving students' attendance rate. The visual dimensions offered by computer technology can especially attract students' attention and thus, teachers believe that it can make instruction more efficient.

In addition to the potential benefits of technology implementation, participants in this study have more negative perceptions about the use of computer technology for instructional purposes in the field of English language teaching and learning. For example, the dehumanizing feature of computer technology is major reason that causes teachers' hesitant attitude toward technology implementation. Teachers said that they prefer face-to-face interaction and believe that efficient communication is less likely to happen via the use of machines.

Besides, teachers suggest that computer technology can promote students' interest in learning. However, teachers also equate computers with entertainment. This perception leads teachers to believe that computer technology in one way can make learning fun. But on the other hand, it can reinforce students' off-task behaviors and therefore impede learning. All the participants mentioned that their biggest concern with having classes in a language lab is that students tend to do things unrelated to the assigned task. Perceiving computer technology as entertainment also leads teachers' use of computer technology to the limited purposes of preparing lessons, managing the classroom and improving students' attendance rate.

Finally, participants (e.g. Kate and Jane) who self-identified as infrequent users of computer technology for instructional purposes tended to relate technology implementation to computer programming and computer hardware maintenance. This perception causes them to experience a sense of technophobia. It also reflects the fact that support mechanisms and

resources provided to teachers are inadequate and teachers are left on their own with respect to technology implementation. Teachers' fear and their lack of background knowledge regarding computer literacy and technology implementation strategies making them believe that successful technology implementation requires a great deal of time. When teachers are situated in an evaluative context where technology implementation is a top-down requirement and resources are inadequate they tend to address technology implementation as a burden that only adds to their already burdensome heavy workload. Teachers therefore, do not perceive technology implementation as a must. It is one of the many alternatives among other instructional strategies and should not be overemphasized.

Action

From the four cases of this study, I found that the actions teachers take in response to the top-down requirement of technology implementation are different among infrequent users and frequent users of computer technology for instructional purposes. For those who frequently implement computer technology in their instruction, technology implementation is not used for compliance. Instead, it was the instructional strategy teachers chose to adopt long before the MOE evaluation was put into action. Therefore, the top-down requirement of technology implementation does not have a great impact on the practice of teachers' who frequently use computer technology for instructional purposes. On the other hand, those teachers employ technology implementation as a selling point to credentialize themselves. The only concerns teachers have are about (a) how schools regulate the way teachers implement technology, (b) how the regulations restrict teachers' practice, and (c) how the regulations *sabotage their autonomy*. As Charlene pointed out, her school has all teachers use a particular course management system and a pre-designed website for teachers to upload their profile and teaching

materials. The school does this simply because it is easier for the school to manage and to demonstrate records to the MOE evaluation committees. The school does not allow teachers to use any alternative platform to substitute the assigned “cookie-cutter” template. This inflexible regulation adds an extra burden to those who have already created personal websites or who already use an alternative course management system that they chose themselves.

As we have seen, Charlene, for example, complains that the course management system and the website template insisted upon by the school are not user friendly. Therefore, for teachers like Charlene, the top-down requirement of technology implementation becomes an example of *ironic cosmetic compliance* because schools do not truly care about the effectiveness of technology implementation for actual instruction. They just want to fulfill the requirement in the hope of passing the evaluation. The schools’ actions demonstrate that the MOE evaluation results in nominal credentializing processes that have little to do with education.

For teachers who infrequently implement computer technology in their instruction, the top-down requirement of technology implementation inevitably becomes a punishment to them. This is because teachers are overwhelmed with heavy workload. They do not have sufficient background knowledge regarding computer literacy and technology implementation and they are not provided with sufficient resources and support. Often, schools purchased the equipment, left teachers on their own, and assumed teachers would know how to use it. Without knowing what to do, teachers often fail to prioritize technology implementation. When situated in an evaluative context, even though teachers remain silent and bend to the reality, they also demonstrate passive aggression toward technology. Often, the equipment sits at the corner covered with dust and simply serves as a decoration. Teachers stick to their original instructional strategies without using the equipment the school provides even when the instruction is conducted in a language

lab. When asked about their actual actions in response to the top-down requirement of technology implementation, the data shows that teachers who infrequently adopt technology implementation tend to recruit technology as a vehicle for complaint. They complain about the whole education system, the evaluation system, the school and students. They also pass the buck and blame problems with the equipment to justify their limited use.

All participants in this study essentialize the role of teachers by pointing out that technology implementation should not be overemphasized. They request teacher autonomy in terms of their instructional strategies and lesson planning. Even though teachers agree that technology implementation has benefits for ELL teaching and learning, they believe that it should only be listed as one of the alternatives among other instructional strategies. It should not be a fixed, top-down requirement because they consider that technology is not necessarily suitable for every content area and teachers interact with different individual students who have different needs each year. Since teachers are on the front line of education and know better than anyone else of what is the best for students, the decision of technology implementation should be left to teachers. It should not be a requirement and should not be used as one of the evaluation criteria to judge teachers' teaching performance.

In addition to teacher autonomy, teachers at different levels of computer literacy all request more hands-on training for computer literacy as well as training for implementation strategies. As the data of this study indicates, ELL teachers are not in favor of pre-designed educational software. Instead, they prefer to design multimedia teaching materials on their own. To successfully achieve this goal, they need to have more advanced computer literacy and have a better idea of technology implementation strategies. Therefore, they suggest that if the Ministry of Education is serious about technology implementation, they should provide teachers more

training. Schools should also reduce teachers' heavy workload because successful technology implementation requires tremendous time investment and teachers' continuous commitment.

Tables

In the following section, five tables are included. The first four tables demonstrate summaries of the findings for each of the three research questions for the four individual cases. The last table illustrates the findings for the cross cases analysis of Kate, Chen, Charlene and Jane.

Table 1 Case Summary Response to Research Question—Kate

Case #1 Summary – Kate	
Research Questions	Findings
<p>Research Question 1:</p> <p><i>What are ELL teachers' perceptions of technology implementation for instructional purposes?</i></p>	<p>Kate perceives technology as more relevant to programming and hardware maintenance. Due to her insufficient computer literacy, technology cannot solve her biggest issues (e.g. the lack of time, heavy workload, students' low learning motivation) in her practice. On the contrary, it brings an extra burden to her. Kate perceives that technology has few benefits for ELL. Kate believes that technology is more beneficial for personal leisure than for pedagogical purposes. Technology is more for the use of students' self-regulated learning for reviewing lessons than for actual instruction. Helping teachers to look <i>tech-savvy</i> and earning a higher reputation are the only benefits teachers can gain from technology implementation. Therefore, Kate perceives that technology is never a "must-have" and should not be overdone. Kate believes that teachers should have the right to determine their own instructional strategy and level of technology use and that technology can surely be replaced by other instructional strategies.</p>
<p>Research Question 2:</p> <p><i>What are their central concerns regarding technology implementation for instructional purposes?</i></p>	<p>Although Kate points out several potential benefits and concerns regarding technology for ELL. First, Kate points out that it requires more time for material preparation and equipment operation. Second, the problem of unreliable technology often impedes her successful instruction. Third, she is concerned that technology is dehumanizing and inhibits close human interaction thus having a negative impact on classroom dynamics. Fourth, Kate also questions the effectiveness of technology for assisting ELL learners acquiring new concepts. She believes that <i>transmitting knowledge</i> through human instruction is best.</p> <p>Finally, Kate worries that technology is overemphasized by policymakers and administrators and that this conveys the misleading message that the tool is more important than both content and the guidance of human instructors. In this way, teachers are disempowered when technology is overemphasized.</p>
<p>Research Question 3:</p> <p><i>What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?</i></p>	<p>Kate justifies her infrequent use of technology for ELL by "passing the buck." She "passes the buck" to students, to the evaluation system, and to the technology itself. Kate emphasizes that the key to successful instruction is the guidance of human instructor. For Kate, the relative advantages of technology are very limited. Technology cannot assist teachers in solving the problems of daily practice. Kate also "passes the buck" regarding students' low learning motivation. She believes that learning should be spontaneous and computer technology can do nothing to promote intrinsic motivation. Kate also "passes the buck" to the misaligned MOE evaluation. For survival reason, all attention goes to things that can credentialize the school in the MOE evaluation. Due to lack of time and heavy workload there is minimal compliance with technology directives. Technology is given low priority since it is a small part of the evaluation.</p>

Table 2 Case Summary Response to Research Question—Chen

Case #2 Summary – Chen	
Research Questions	Findings
<p>Research Question 1:</p> <p><i>What are ELL teachers' perceptions of technology implementation for instructional purposes?</i></p>	<p>Chen perceives that technology implementation can assist teachers in editing and modifying existing learning materials. Technology-enhanced learning materials bring a “fun” element to learning. Therefore, technology implementation can promote students’ motivation for learning, can increase student-teacher, and can create an engaging classroom dynamic.</p> <p>Visual representation can assist students in overcoming learning obstacles. Computer technology can also offer students an easy access to the target culture and extend learning outside the classroom through online self-directed learning. Rather than responding to the top-down policy, Chen is intrinsically motivated to use technology. However, Chen believes that technology should not be overdone.</p> <p>Chen claims that computer technology is not necessarily compatible with courses that require in-depth analysis of text. Human instructors are still key to successful instruction. Therefore, technology should not be used as a credentializing standard to evaluate teachers’ performance. Chen requests teacher autonomy in determining his own instructional strategy. In order to assist teachers Chen suggests that schools offer high-end facilities and teacher training for acquiring computer literacy.</p>
<p>Research Question 2:</p> <p><i>What are their central concerns regarding technology implementation for instructional purposes?</i></p>	<p>Chen has four central concerns regarding technology implementation for instructional purpose. First, technology implementation requires more commitment on setting up machine, fixing technical problems, course preparation, and curriculum planning. Second, even though computer technology can promote students’ interests in learning, it can also reinforce students’ off-task behaviors. Third, due to the dehumanization feature of computer technology, the use of computer technology can have negative impact on the interaction and relationship between teachers and students. Fourth, Chen implements computer technology in his instruction selectively because he believes that technology implementation does not work well with every course. When technology implementation becomes a top-down requirement and is used as a standard to judge teachers’ performance, it will have negative impact on the effectiveness of teachers’ instruction.</p>
<p>Research Question 3:</p> <p><i>What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?</i></p>	<p>With advanced computer literacy and abundant resources provided by the school, technology implementation becomes less of a burden to Chen. The top-down requirement of technology implementation does not have significant impact on Chen’s practice because he has been doing it before the policy had been enforced. Chen chooses to remain his current instructional strategy with the use of computer technology because resources and support are accessible. Besides, Chen requests teachers’ autonomy in determining their own instructional approach. Chen mentions that technology implementation should not be a requirement and should not be overemphasized. Teachers should have the freedom to decide their instructional approach because teachers on the front line know what work the best for students.</p>

Table 3 Case Summary Response to Research Question--Charlene.

Case #3 Summary – Charlene	
Research Questions	Findings
<p>Research Question 1:</p> <p><i>What are ELL teachers' perceptions of technology implementation for instructional purposes?</i></p>	<p>For Charlene technology is not a panacea but a facilitator. The biggest concerns she has in her practice are her students' low learning motivation and the issues of heavy workload and the lack of time. Therefore, computer technology is used for two functions: 1) instruction, and 2) classroom management. Charlene believes that technology can increase ELL learners' motivation for several reasons. First, technology-enhanced learning materials are interactive. Young people are "digital natives," and technology fits well with their learning style. Second, the visual/audio features of technology aid ELL in comprehending abstract concepts. Third, with technology ELL learners can be situated in an authentic learning environment and have easy access to the target language and culture. Charlene tries to motivate her students with technology. For the purpose of efficiency and time-saving, Charlene found that technology can assist her in efficiently managing her courses and material development. It also creates a channel for efficient interpersonal interaction with her students. Most important of all, computer technology functions as a motivator to gain students' attention and then saves the time teachers have to spend on managing off-task students.</p>
<p>Research Question 2:</p> <p><i>What are their central concerns regarding technology implementation for instructional purposes?</i></p>	<p>At Charlene's school, there is a power struggle between teachers and the school. The policy of technology implementation (and many other pedagogical policies) excludes teachers' voices. Therefore, top-down decisions become a burden and teachers lose their autonomy for determining their own instructional strategies. There is an amplifying casual loop happening regarding technology implementation. The school does not have sufficient funding so they have to purchase unreliable equipment and cannot provide sufficient support to teachers. This makes it harder for the school to implement technology well. Cosmetic compliance results. Charlene's other concerns include large class size, teachers' lack of computer literacy, teachers' lack of time, the dehumanizing feature of technology, and student plagiarism.</p>
<p>Research Question 3:</p> <p><i>What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?</i></p>	<p>There is a paradigm shift at work in this particular school context. Students are treated as customers and the school is treated as factory. Curriculum is market-oriented and teachers' educational philosophies are goal-oriented. Therefore, in response to the top-down policy of technology implementation, the actions Charlene takes are bending to the reality, unconsciously buying into the story policymakers create, cutting corners, and cosmetic compliance. She buys into the profit motive system that oppresses her though she is not aware of it. Teachers unconsciously follow policies for survival reasons without putting on a critical lens to view the power inequality. When test-taking is highly encouraged and teachers are unconsciously positioned as a sales persons and when curricula is designed for profit, administrators run the school like business. The profit motive might encourage efficiency, but it might also damage the education quality.</p>

Table 4 Case Summary Response to Research Question—Jane

Case #4 Summary – Jane	
Research Questions	Findings
<p>Research Question 1:</p> <p><i>What are ELL teachers' perceptions of technology implementation for instructional purposes?</i></p>	<p>Jane has low expectations regarding technology for ELL. She perceives it as a tool for: 1) enhancing writing speed, 2) drawing students' attention, 3) efficient course management, 4) course preparation, 5) searching for information, 6) presenting course content, and 7) facilitating communication. In other words, Jane perceives technology as a tool that stands alone rather than as a tool that can be integrated with the curriculum. Jane also claims that the “dehumanizing” feature of technology tends to impede students from learning as it diminishes human interaction and disables learning by doing. Jane is in favor of hand-made props, role plays and face-to-face interaction for ELL. The use of computer-mediated learning materials is beyond her scope of perception. Jane's reluctance also involves her perception that computers are for entertainment. Jane also perceives technology implementation as programming and hardware maintenance. This belief reinforces Jane's technophobia. Therefore, Jane does not perceive technology to be a “must-have.” On the contrary, it is a waste of time and brings an extra burden and more problems to teachers on the front line.</p>
<p>Research Question 2:</p> <p><i>What are their central concerns regarding technology implementation for instructional purposes?</i></p>	<p>Jane's is concerned that technology is often used to “entertain” students so its impact on learning is negligible. She is concerned that technology reinforces students' passive attitude toward learning, their off-task behaviors, and cheating. Jane is concerned that pieces of equipment are often broken, not regularly maintained or upgraded, or are incompatible with one another. No technical support, guidance, assistance or training is provided. She is concerned that technology involves difficult programming. For Jane, technology becomes “a pain in the neck” when teachers are placed in this “sink or swim” position. Large classes increase her reliance on the lecture method of instruction. She is concerned that teachers are overloaded and do not have time for professional development. Jane's poor computer literacy, technophobia, insufficient support from the school, and the top-down technology implementation make her feel “at loose ends.” Further, the academic culture in Taiwan intimidates her as information and knowledge are not openly shared.</p>
<p>Research Question 3:</p> <p><i>What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?</i></p>	<p>There are two major patterns identified regarding Jane's actions. First, out of the fear of computer technology, Jane simply gives up the idea of technology implementation. Jane found that her limited knowledge of computer literacy gets in the way of technology implementation. Her current method of instruction (e.g. lecture and the reliance on textbooks) and evaluation approach (e.g. pencil and paper test) still “works efficiently” for her class. It is not surprising to see that Jane gives up an innovative instructional strategy that is new to her. Second, Jane holds a procrastinating attitude toward learning an innovative instructional strategy. Jane keeps mentioning that technology implementation is beyond her capacity and she tries to avoid something she is not comfortable with. The fulfillment of the requirement of technology implementation becomes selective and minimal (cosmetic compliance). In fact, attention goes to things that are more urgent and technology implementation is considered to be an extra burden.</p>

Table 5 Cross Cases Analysis Summary of Kate, Chen, Charlene and Jane

Case	Context	Beliefs	Actions	Major Themes	Emergent Findings
Kate	<ul style="list-style-type: none"> An Amplifying Causal Loop The MOE evaluation (MOEe) turns out to be an evaluative misalignment that disempowers teachers. A <i>credentializing</i> Evaluation A punishing incentive structure 	<p>Technology implementation...</p> <ul style="list-style-type: none"> is programming and hardware maintenance. can only be used for students' "self-directed" learning. is dehumanizing. is a great facilitator for preparing lessons. is a powerful tool for classroom management. is a burden is for entertainment. is not a must. 	<ul style="list-style-type: none"> Cosmetic compliance Cutting corners Remaining silent Complaining Passive aggression Justifying her limited use of technology by passing the buck, essentializing the role of teachers, being ironic, and downtoning the function of technology 	<ul style="list-style-type: none"> Technology as a vehicle for complaint Technology implementation is of low priority. The dumbing down of the MOEe is enthusiasm killing Teachers feel forced to fulfill requirements that they perceive irrelevant to ELL. 	<ul style="list-style-type: none"> An Ironic Amplifying Causal Loop Contradictory Statements about Technology A nominal <i>credentializing</i> process. — Mobilizing <i>survival politics</i> in response to the MOEe.
Chen	<ul style="list-style-type: none"> The MOEe focuses attention on things that are 'more urgent.' Minimal compliance results. When technology implementation becomes a top-down decision and teachers are situated in an evaluative context, teachers loss of teacher autonomy results from top-down evaluative and punitive conditions 	<p>Technology implementation...</p> <ul style="list-style-type: none"> can be used to improve attendance rate can promote students' motivation is a facilitator for 'efficient' instruction. requires more time commitment is dehumanizing will reinforce students' off-task behaviors should not be overemphasized 	<ul style="list-style-type: none"> Technology implementation is not used for compliance; instead, it reflects Chen's free will. Chen is requesting teacher autonomy in determining his own instructional approach 	<ul style="list-style-type: none"> Chen prioritizes teachers' autonomy when technology implementation is a top-down requirement. An amplifying causal loop of lowered student expectation leads to limited technology use and his instructional strategy remains "teacher-centered." 	<ul style="list-style-type: none"> Even with technology, it's still hard to change classroom culture. Teachers' original beliefs and practices remain the same. Even though technology plays a major role in Chen's instruction, teacher control remains. Chen buys into the system and promotes teaching to the test
Charlene	<ul style="list-style-type: none"> The MOEe restructures/reforms the school into a better place. The MOEe reinforces the power struggle between teachers and the school. In order to pass the MOEe, the school will sugarcoat for the MOEe committee. Teachers feel at loose ends towards the MOEe. The school takes a carrot-and-stick approach. The actions teachers take in response to top-down decisions are self-comforting, blind obedience and cosmetic compliance. There is an amplifying casual loop happening in this school context 	<p>Technology implementation...</p> <ul style="list-style-type: none"> can promote students' motivation for learning is a time saver is a facilitator for learning and information exchange is not a panacea if required can be a burden 	<ul style="list-style-type: none"> Charlene uses technology as a selling point for students' interest in learning. Charlene bends to reality and has minimal/cosmetic compliance when she cannot consent to particular policies. Charlene prepares for unreliable technology with back-up plans Charlene asks for more tech training. 	<ul style="list-style-type: none"> An oppressive context 	<ul style="list-style-type: none"> A shift of pedagogical orientation The misaligned evaluation leads the administrators to run the school like a business. Students are treated as customers. Curriculum is developed in response to the misaligned evaluation criteria. In an evaluative context, Charlene's educational philosophy was more goal-oriented and profit-motivated. Charlene unconsciously buys into the system that oppresses her.
Jane	<ul style="list-style-type: none"> The school's passive aggressive attitude situates teachers in a disempowered position and damages faculty morale. The MOE evaluation is considered to be misaligned For survival reasons, the school cuts corners by beautifying records. There is an amplifying causal loop happening in this school context 	<p>Technology implementation...</p> <ul style="list-style-type: none"> is a powerful tool for classroom management is programming is entertainment is not a must is an unreliable assessment tool can impede learning 	<ul style="list-style-type: none"> Jane demonstrates passivity toward technology Jane blames the school and students. Jane requests hands-on computer training. 	<ul style="list-style-type: none"> Jane is technophobic. 	

In the following section, I will discuss the major findings among the four cases.

Discussion

All the participants emphasized that technology implementation cannot guarantee a successful instruction. Technology can facilitate ELL teaching and learning if used appropriately, but it will never replace other instructional strategies that have long been embraced and adopted by ELL teachers in Taiwan. By observing all the participants' practice, the use of computer technology for instructional purposes does not necessarily change the way teachers teach in schools. The classroom dynamic still remains teacher-centered and one-way in that the lecture is still the major component of instruction. With or without computers, knowledge is delivered and transmitted in the same way in school contexts. Therefore, instead of promoting technology implementation, maybe we should consider revisiting the definition of "technology" and "technology implementation." We should also ask ourselves: why technology? Apparently, participants in this study stay at the functional level of technology use (of knowing how to use technological resources to facilitate learning and to improve performance) when talking about technology implementation. However, defining technology as a way of thinking is rarely introduced or mentioned. If teachers' perception of technology implementation could be broadened into a larger scope, there might be a greater chance to help teachers to see the connection between ELL teaching and learning and technology implementation.

From the data of this study, we can see that technology implementation is not the answer to successful education reform, either. There are serious issues regarding the organizational structure as well as the higher education system of Taiwan. The data indicates that the MOE evaluation criteria itself should be re-evaluated. The gap in belief between policymakers and educators should also be bridged through more communications. From the data of this study, it is

also found that when an evaluation is a punitive structure, it will not only damage faculty morale, but also will sabotage the overall education quality because schools will strive for their survival by getting around by way of the loopholes. Therefore, the structure of the MOE evaluation should be shifted to an incentive one that allows schools more time for change and provides schools with more assistance, guidance, resources and support.

CHAPTER 6: DISCUSSION & IMPLICATIONS

Introduction

In this chapter, I will discuss the findings of this cross case study. I will first provide a personal *researchers' reflection* on the process and products of this work focusing on lessons learned as I explored the implementation of computer technology for ELL in Taiwan. I will then reiterate the key findings of the study. I will then discuss the implications of this study for practice and policy in the fields of ELL, educational technology, educational policy, leadership, and curriculum development. Following this, I will discuss the limitations of this study. Finally, I will point to research that should be done in the future by this researcher and others to further explore the issues illuminated here.

Researcher's Reflections

As a novice researcher, the process of dissertation writing is a journey of self-exploration. It is a journey that led me not only to get to know more about academic research and the topic being investigated but also about myself. As an educator and a researcher, my visit to the schools, my conversations with teachers on the front line and the process of constant self-reflection all helped me to have a better picture of who I am, to broaden the scope of my educational philosophy, and to shape the goal of the next phase of my academic career.

Reflection on the Research Topic

Before pursuing my doctoral degree, I was an ELL teacher in Taiwan teaching college-level students English. In Taiwan, there is a myth saying that a foreign earned degree is more valuable than a local-earned degree. But, having a master degree in the field of TESOL earned in the U.S. did not bring too much substantive help in my teaching. A lot of the theories I learned in

the U.S. couldn't be directly adopted and applied to the context in Taiwan. The most challenging task for me at that time was the different classroom culture and educational beliefs between the western societies and Taiwan. From my teaching experiences, I came to understand that a successful curriculum reform requires a full understanding of the socio-cultural context, students' needs, and teachers' concerns in their daily practice. Generally speaking, in Taiwan, a highly reliance on accountability, the constrain of school structure and the an emphasis on credential all make it difficult for me to carry out the theories and instructional strategies that I learned in my graduate program in the U.S.. A great example of this is the promotion of technology implementation for instructional purposes that is tied up with the MOE evaluation. The idea of technology implementation was to transform the classroom culture to be interactive, customize and learner-centered. However, what I've observed in real classrooms in Taiwan is a totally different story. When teaching in Taiwan, I was involved in several multimedia-based learning projects and I also helped the school establish a multimedia learning center in order to promote the use of technology for creating an interactive learning environment for students. The university was enthusiastic about investing huge amount of money and human resources on turning the school into a technology-rich learning environment, in a belief that this can guarantee them a success in passing the MOE evaluation and can recruit more students. However, most of my colleagues became aloof when this topic is brought up and few of them used the cutting edge equipment in that multimedia learning center that the university built. It turned out that the university had to mandate teachers to instruct their class in that multimedia learning center when the founder of the university or the MOE representatives visited. In seeking the real reasons for teachers' underuse of technology for instructional purpose, I proposed a study on this issue and began revisiting universities in Taiwan and interviewing teachers on the front line. Listening to

teachers' stories and concerns, I came to realize that a critical re-examination of the evaluation system and the educational policies and how they are aligned with the real needs of teachers and students are more radical than simply blaming teachers for their underuse of technology in schools. Rethinking what it means to be "good" education and "why technology?" are more important than blindly embracing and promoting the idea of technology implementation. What teachers are dealing with in a real classroom is way more complex than what we can imagine. Passing the top-down evaluation, fulfilling the heavy administrative duties, meeting parents' expectations, increasing students' academic achievement, and dealing with all types of problems happening in the classroom and in students' personal life are all laid on teachers' shoulders. As a former ELL university instructor in college of technology in Taiwan, I also had been through the MOE evaluation with the university that I worked for. As exactly what my participants revealed in the interviews, the top-down MOE evaluation became a nightmare to most of teachers and universities because tremendous time, efforts and human resources were put on reaching the goal of passing the MOE evaluation. Inevitably, teachers' attention was forced to focus on fulfilling the requirements mandated by the university and the Ministry of Education. I viewed the MOE evaluation as a war that everyone was allied on the same boat and "was volunteered" to fight for it. It is a life-or-death fight and the survival of the university assimilates to the survival of teachers as well. While working on helping the university to pass the MOE evaluation, students always came to my mind because I often felt guilty for not being able to fully concentrate on teaching and student supervision. I truly believed that passing the MOE evaluation is not a guarantee for a better education quality; it is just a game that involves too much politics. Students and teachers' benefits are not well protected as what the policymakers have claimed. This makes me wonder who is the winner and who is the loser in this "game." What I witnessed

is that teachers were often frustrated and powerless for not being able to make a change or to speak up for themselves along the way. I was one of them. Toward the end of the analysis phase of my study, some questions also came into my mind: “is technology a promising answer to the problems that we have in education for a long time?”; “what exactly is the purpose of the evaluation?”; “who benefits from this evaluation?”; and “is the evaluation making our education to be good as policymakers claimed.” By listening to the stories of my participants, and then connecting their stories to my own experiences, I cannot stop questioning the legitimacy of the current policy and the current evaluation system. I do believe that a careful re-examination of the ideology and philosophy underpinning the educational policies should be seriously taken into consideration if the ultimate purpose of the evaluation is for a better education.

Reflection on the Research Process

As a novice researcher, the process of data analysis and dissertation writing was a whole new experience for me that shaped who I am as a researcher. Adopting Grounded Theory as an analytical tool challenged my patience and tolerance toward ambiguity, particularly at the very early stage of my dissertation writing. Conceptualizing the very idea of “saturating the data” is one thing, but embodying this idea during the whole research process is another. It is a fairly challenging process for me as a novice researcher. Not until the late stage of my writing did I come to realize that without sufficient time investment on the tedious process of coding, memoing, and constant comparison, it would be hard for me to capture the bigger picture of what was actually happening in the data. Take Kate’s contradiction as an example. Without allowing myself time to go deep into each case, to have a better understanding of the evaluative context through the analysis of the four cases, to identify patterns that emerged from participants’ experiences, and use this information to revisit what puzzled me with Kate’s contradiction, it

would have been hard for me to figure out the underlying messages of Kate's contradiction and why she was reacting the way she did. As a novice researcher, this is a valuable learning experience and the concept of "saturating the data" by way of constant comparison became a meaningful and useful analysis strategy for me to make sense of my data.

My interaction with my four participants and my visit to their classes also helped me to have a better picture of the context, teachers' struggles and the dilemma schools and teachers are facing in the real world in Taiwan. Even though my field notes are not the major focus of my dissertation, the in-class observations and informal conversations with my participants did provide me with some significant missing information in the face-to-face interviews. It also allowed me a chance to witness what teachers are actually struggling with on the front line. During my classroom visits, some students approached me and expressed their opinions on the school, teachers' instructions and the curriculum. Their remarks also enlightened me and gave me a better understanding of the context from a different perspective.

Other challenges I encountered during the whole research process included the difficulty of recruiting participants, developing trust with participants, being objective during the data analysis process and ethical issues that emerged during the writing process.

At the very early stage of recruiting participants, I hit a dead end for quite a long time because I had been rejected by several potential participants. A major reason for this was related to their fear of being judged and their insecurity of having a stranger sitting in their classes watching their practice. As many teachers I contacted revealed, they are not good at computers and they don't have time for them. For that reason, they perceived themselves as "unqualified" participants for my study. After I explained that I am more interested in knowing what leads to their infrequent use of computer technology for instruction, they simply politely rejected me. My

assumption was that infrequent users of computer technology for pedagogical purposes might have a lot to say about their negative experiences with technology or they might complain a lot about their current situation that makes technology implementation impossible. However, I was very surprised that most of them sounded embarrassed as if they were doing something wrong and they could be blamed for not using technology in their instruction. Their resistance to participating in my study I suspect really comes from an embarrassment of not being tech-savvy, a shame of not following the “trend” and feared being judged.

Other teachers rejected me because they were uncomfortable with being observed. One teacher rejected me and said, “Having you sit in my class makes me feel like you are evaluating me. I don’t know what you are going to say about me and my practice in your dissertation. I just don’t feel comfortable with the idea of being judged.” This is not an exceptional case. Chen, the second case in this study, expressed his strong resistance toward my observation of his literature class at the very beginning because he is more interested in showing me his “model” class (e.g. listening class) that involved a lot of technology use. I had to try hard to let him know that I am not there to judge him. Instead, I sought to audit all of his classes so that the observations can help me gain a better understanding of the context and his overall instructional strategy.

From my experiences recruiting participants and my interactions with the potential participants, I came to realize that the cultural context needed to be addressed and discussed in the interpretation of my findings. Teachers who serve in higher education in Taiwan do not have a teacher union to protect and to speak for their rights. As the MOE evaluation strengthens, the culture of evaluation becomes even more prevalent and is widely becoming accepted as a standard to determine “quality.” Situated in an evaluative and oppressive context for a long time, teachers inevitably connect “classroom observations” with the idea of “being evaluated” and

“being judged.” Apparently, teachers perceive their participation in academic research as a hidden threat to their career rather than as a possibility for professional development. Their fear in fact, comes from the punishing incentive structure embedded in the credentializing process that they have experienced in their teaching career over the years. Another explanation for teachers’ fear of being judged might be related to the trust issue between researcher and participants. Take Chen as an example, due to time constraints, the interviews and classroom observations were conducted right after our first telephone conversation. We did not know each other before my first visit to his class. When I asked Chen for his permission to record our conversations, he cautiously said, “um, then I’d better to be careful about what I’m saying.” I tried to let him know that everything will be anonymous and confidential. I also showed him the consent form and explained that all the participants’ rights will be protected under IRB. However, without knowing each other well and without having sufficient time to develop trust, at the beginning of the process of data collection, I did encounter some difficult moments. Chen had a hesitant attitude toward answering certain questions and had concerns having me sit in some of his classes other than the “model classes” he desired to “present” to me.

My experience recruiting participants and my conversations with ELL teachers in Taiwan reinforced my intention of addressing the context from both the macro level (e.g. Taiwanese academia, the structure of the higher education in Taiwan, and the evaluation system) and the micro level (e.g. the school context teachers are situated in). I came to realize that only by doing so can we fairly interpret teachers’ corner-cutting behaviors based on the challenges and struggles they have been through. We cannot have a full understanding of the challenges of technology implementation in English teaching in Taiwan without mapping out the organizational problems that have long existed in Taiwan. Simply saying that “teachers are

resistant to change” is ignoring the true story behind the scenes and it is an unfair statement depicting teachers’ hard work on the front line.

Being a novice researcher, I also found it challenging to be objective and not to over-interpret while analyzing the data. For instance, having a similar experience with the participants was both good and bad and enabled me to easily develop connections with the participants and to understand the context better. But my prior experiences also served as a subjective lens I took on when analyzing and making sense of the data. For example, my personal experience with technology implementation inevitably created a subjective assumption of how teaching can be done with the aid of computer technology. This assumption can become a bias and is a threat to the validity of the study. For example, there was time when I found myself blaming my participants for using technology in a drill-and-practice approach. As my analysis went on, my subjectivity impeded me from being true to the data. After I realized this problem, I tried to avoid bias by way of staying close to the data and constantly revisiting the original transcriptions of the interviews. Staying close to the data helped to give me a solid and a holistic picture of what the participants were trying to convey without my putting a personal bias on the interpretations. I also invited other researchers in different research groups that I was involved in to do coding on some part of the data. Then I compared my codes with my colleagues’ in the hope that this triangulation process would increase the validity of my findings and to ensure that my arguments are fair and appropriate.

The last challenge I encountered was related to the ethical issue that emerged while I was unpacking the gap between teachers’ assertions about their educational philosophy, their perceptions of technology implementation and their actual practice. Having thought that my participants might have a chance to read my dissertation, I inevitably attempted to take into

account their feelings toward my interpretations of the findings. Although I used a theoretical framework that leads me to believe that I would find ELL university instructors' experiences with the top-down requirement of technology implementation, my somewhat surprising findings actually indicate that teachers engage in cosmetic compliance to the top-down policy. I found it difficult when addressing this particular finding, with a fear that my interpretations of the participants' patterns of thought and actions would make them feel offended and judged. My struggle also involves whether this finding would mislead my readers to blame teachers' cosmetic compliance and then ignore the fact that we should pay more attention to the discussion of the overall evaluative context and the misaligned policy that gives context to teachers' corner-cutting behaviors. I was aware that the language being used in the writing has the power to impact how things are perceived. So, my struggle was finding appropriate, neutral language to use to depict a somewhat negative, unpleasant phenomenon happening in the current educational settings in Taiwan. I viewed how researchers report the research findings as an ethical issue. As a novice researcher, I had a difficult moment. I wanted to truly report the findings but at the same time, I also questioned myself as to how I could do that without hurting my participants' feelings.

Another ethical dilemma that I encountered in the writing process is related to my concern for taking a political stand. While a dumbing down of the education in Taiwan is a major finding in my study, illustrating these current problems and addressing the misaligned evaluation system generated by the Ministry of Education might suggest some blame on certain stakeholders. In the analysis and writing phases, I faced the challenge of how I should fairly interpret my findings so that I could truly represent teachers' struggles without causing readers to unfairly put all of the onus on teachers? How should I illustrate the amplifying causal loop without taking a political stand and blaming any stakeholders who took part in the education

related decision-making process? To be more sensitive to this issue, I was very careful about word choice and the way I addressed the issues in hoping that the focus of this study does not end at the point of criticizing the current educational system in Taiwan. Instead, my intention was to put more weight on pinpointing the problem, provoking some discussion on the issues and then providing alternative perspectives for possible solutions.

The Conversation between Kate and I

From my conversations with Kate, I found that many administrators run colleges of technology like businesses. Attention and effort go to things that can make monetary profit for the school, but are not radically beneficial for teachers, students and the overall education quality. When profits come first, universities will no longer be the place to foster intellectual pursuits. It becomes a place to provide technical expertise required by the modern industrial society.

The most compelling interview that I had with Kate was about the MOE evaluation and how teachers feel disempowered and helpless toward the heavy workload due to the evaluation. It was a late night interview conducted by telephone. It was our second talk. I still remember the feeling of being depressed by the end of the interview. Both of us sighed and were silent for a long time after Kate shared her experience of working in an under-resourced school and her disappointment at the MOE evaluation and the educational system in Taiwan. That interview dredged up my own memories of being an ELL university instructor in a college of technology few years ago. The majority of the students that I worked with had been left behind by so-called “mainstream” education. Many of them were frustrated by standardized tests and were therefore given up on by teachers in high school. They lose motivation for learning because they find it hard to fit in the system where diplomas and test scores are so highly valued and where a person’s ability and value was highly judged based on test scores. Or probably I should say,

academic performance is measured by test scores and that is the school's only concern that frames the curricular objectives and shapes teachers' instructional strategy. Students who fail to fit in this kind of "test-oriented" education system were inevitably placed at the bottom of the hierarchical structure of the Taiwanese education system (e.g. the least prestigious, under-resourced schools). Their unpleasant learning experiences are not rewarding at all so that they gradually lose interest in learning. For a long time, I saw students lacking motivation and there were more and more drop-outs occurring each year. Schools care more about how to recruit more students and how to pass the MOE evaluation without paying much attention to what they should do in order to assist their students to overcome their barriers to learning. Schools place this duty and responsibility onto teachers' shoulders. Therefore, teachers in colleges of technology have to spend most of their time on their teaching and consulting students without getting any assistance from the school. How can a teacher accomplish so much on their own? Most teachers, placed in this education system, dare not to take action to fight for their rights for the fear of being fired. The only thing they can do is to be silent and struggle. The late night conversation between Kate and I made me wonder what the purpose of higher education is and what we are trying to teach our next generation. I also questioned the power relation between education and politics and began to worry that the legitimate educational regulation is only a vehicle for politicians to reinforce their own political ideology rather than doing good for education in Taiwan. I also questioned whether the policymakers are clear about the potential threat of turning colleges into places to nurture future employees for the industry and shifting the purpose of education to serve the needs of the business sector. Do they see the paradox between their claim of the purpose of the MOE evaluation and what the misaligned evaluation actually results in? If these questions are not brought to the table for serious and careful discussion, in the long run, the constantly

changing policy regarding education reform will gradually undermine the foundation of education in Taiwan. I was hoping that the findings of this study might eventually present teachers' struggle about the top-down evaluation and how the ideology underpinning the policy impacts teachers' practice, curriculum development and the overall education quality in Taiwan. By presenting these findings, I am hoping to evoke more discussion on educational policy and a better direction for educational reform.

The Conversation between Chen and I

Chen was referred to me through a friend who teaches in a different department in Chen's school. Chen's school had successfully passed the MOE evaluation and was promoted to be a university of technology before my visit. Chen's school is also ranked as one of the top-ten universities of technology in Taiwan because they have successfully provided a solid record to the Ministry of Education, showing that they provide high quality education to students. I was very curious about Chen's experiences with and perceptions of possible school's cutting corner behaviors as well as how he dealt with the heavy workload. What surprised me the most about Chen's reply and his attitude was that Chen down-toned the heavy workload and avoided saying anything about what the school actually asked teachers to do. Chen simply denied the heavy workload and tried to dodge my questions about the school's "special requests" for teachers for passing the MOE evaluation. Later on, in my second visit to the school, I requested Chen to allow me to observe his literature class. Chen tried to persuade me not to waste my time on that class because he doesn't think that there is much to see in that class. When I asked him for the reasons, he mentioned that his instruction in that literature class is lecture-based without technology use. Chen cannot see how technology benefits a literature or translation class where knowledge transmission is valued more than the development of four skills or other higher order

thinking ability. He also asked me in a defensive tone, saying that “who wouldn’t use the traditional way to instruct a literature class?” He then challenged me about how I would instruct a literature/translation/composition class that he considers lecture-based instruction as the most appropriate approach. I presented him with the reasons why sitting in all of his classes might assist me in developing a better idea of the issues I wanted to investigate for this study. I also tried hard to let him know that it is important for me to visit all of his classes regardless of the use or nonuse of technology. Even though I finally got his approval, he insisted at the beginning, that I not visit his classes. He feared “showing” me all of his instruction. He was eager to present me with a “model” class which he perceived as state-of-the-art. All this makes me believe that Chen is a good example of an oppressed teacher who has been situated in an evaluative context for a long time and is not comfortable to reveal his negative experiences to others. What surprised me even more is that Chen even suggested that I forge my data of the on-site observation field notes and he tried to persuade me not to waste my time on his literature/translation classes.

Another interesting experience I had with Chen was the contradiction between his actual instructional strategy and his claim of why he uses technology in his instruction. By observing Chen’s listening classes where instructions were conducted in a language lab and the presentation of lessons were done via computer technology, I found that the classroom culture still remains teacher-centered and teacher-controlled. The interaction between Chen and his students is one-way in which Chen plays the role of an authoritative figure in the class. Transmitting content knowledge is the focus of the lessons and student performance is evaluated based on test scores. While one of the expectations behind the promotion of technology implementation is to shift the classroom dynamic into an interactive and student-centered one,

Chen's case represents the fact that the implementation of computer technology does not necessarily change the way teachers teach in school contexts. While the mandate of technology implementation is initiated in schools, the long-existing educational philosophy widely adopted by educators in Taiwan is hard to break. Education still remains test-oriented (rooted in the philosophical orientation of Confucianism) and the class size is still large (for economic reasons), with approximately 50~70 students. Recitation is valued more than the development of critical thinking ability. It is, then, not hard to understand why the traditional instructional strategy (lecture-based) is the mainstream because it is an efficient approach to manage a large class. When an innovative instructional strategy is introduced and encouraged but the culture and the structure of the education system still remains unchanged, the successful implementation of technology is not surprisingly a big challenge.

The Conversation between Charlene and I

Before I had my first interview with Charlene, I spent some time walking around the campus. That was four years after my last visit to this school. I was very impressed by the change of the physical environment of the school. When I opened up the conversation and pointed this out to Charlene, she was immediately contemptuous of the change of the school. Charlene then complained how the school sugarcoated what actually happened in the school in order to pass the evaluation. Purchasing equipment and decorating the building into a so-called "high-end," "state-of-the-art" campus is one of the methods the school used to "fool" the Ministry of Education. As Charlene mentioned, the "technology-enhanced campus" is in fact, an empty box covered with luxurious wrapping paper. Charlene pointed out that with a limited budget, the school can only provide poor quality facilities to teachers and students. However, outsiders like me or the MOE evaluation committee members will never have any idea of this

unless some “black sheep” reveals the truth to the outsiders. The school beautified their current situation and successfully fooled the Ministry of Education by presenting a façade. Charlene said that the MOE evaluation is a nominal evaluation because quantity trumps quality and this allows “number” to beautify poor quality. Since reforming the structure of an institution requires tremendous time and budget, under-resourced schools usually have to develop alternative survival strategies to make things work within a short time. For the purpose of efficiency, creating records and making up numbers are much easier than making fundamental changes. To Charlene, the nominal evaluation process is not a welcome improvement. On the contrary, it unintentionally encourages schools to find loopholes.

Charlene also mentioned that the MOE evaluation is a nominal credentializing process because as long as the school develops good relationships with some officials in the Ministry of Education, the school gets the voucher to pass the evaluation. The MOE evaluation is unintentionally mobilizing survival politics. It is a rather political and unfair credentializing process. Since the school endeavors to manipulate in this political wrestle, attention will not go to any radical change of the existing organizational problems and pedagogical issues. On the contrary, the MOE evaluation unintentionally aggravates organizational problems and also places teachers in a disempowered position. The issue of “unfairness” is constantly brought up by Charlene during the interview process and our informal conversations. As Charlene pointed out, the MOE evaluation results in an unexpected consequence in that it reinforces the power inequality and creates a hierarchical structure in the school context. For example, in order to demonstrate records of teachers’ performance to the Ministry of Education, the school developed a teacher evaluation system to monitor teachers’ performance. Teachers can be either awarded or punished based on the results of the teacher evaluation. Charlene considers this teacher

evaluation system unfair and punitive because the evaluation process is not open to the public and the chairmen of each department have the power to make final judgments. The chairman can therefore, overpower teachers by manipulating the results of the teacher evaluation and then award those who are his or her favorites. The teacher evaluation is used as a bargaining chip by the chairman to negotiate and to operate his/her personal sphere of influence in the school. In other words, the evaluation system unintentionally reinforces the power wrestling that has long existed in the school.

Apparently, the MOE evaluation seems to offer the hope of change and reform of the existing school structure. However, it unintentionally results in unexpected consequences and situates teachers in a disempowered position.

The Conversation between Jane and I

The most compelling conversation between Jane and I emerged in the department office in one afternoon while the school just announced the result of the teacher evaluation. To avoid rewarding teachers, the school rated every teacher's performance as "unsatisfactory." I witnessed teachers' anger and frustration while they knew their efforts were not recognized and were purposively neglected. Faculty morale was obviously sabotaged and all teachers gathered together, complained and presented an attitude of passive aggression. They expressed their unwillingness to devote time and effort to teaching, students service and administrative duties in the future. They kept saying, "no matter what we did, the results will always remain enthusiasm killing. So, why bother?" The atmosphere in the department office in that afternoon was tense and downcast.

Some teachers even came to me and revealed their anger and frustration toward the injustice they experienced from the teacher evaluation system, the MOE evaluation and the

school's policy. They are a group of young educators who have enthusiasm in teaching. However, they don't have any power to fight against the whole system. They could not make changes to address the problems in the system even if they wanted to. My informal conversations with them and my interviews with Kate and Jane brought my memories back to the time when I was a teacher in Taiwan. I suddenly felt connected and their complaints reminded me of how disempowered teachers in the system of colleges of technology can be. Their frustration reflected that problems existing in the MOE evaluation have been overlooked and these problems have planted seeds for the destruction of education quality in Taiwan.

Key Findings

What follows is a list that summarizes the findings of this study here referred to as KEY findings. They summarize the cross case analysis findings elaborated in Chapter 5 (see Table 5).

1. An Amplifying Causal Loop – The top down MOE evaluation punishes schools that don't do well on the evaluation by allocating them fewer resources so that they cannot do better. In the process, the evaluation disempowers and stresses teachers. It results in minimal compliance, cosmetic compliance, and even some corruption. Teachers and staff cut corners to make it look like they are meeting the standards of the evaluation while in reality they are not.
2. Teachers consider technology to have a dehumanizing impact on ELL teaching and learning. Technology is useful for classroom management and for efficient management and instruction. Both management and efficiency are modernistic notions that may reveal disempowering, dehumanizing processes.
3. Teachers believe that technology implementation requires more time than it is worth.
4. Teachers believe that technology motivates students.

5. Teachers resist disempowerment through passive aggressive actions against the school, staff, and students.
6. Teachers ask for more technology training to ameliorate their technophobia.
7. When technology is used, teacher centeredness and control remains. Technology does not essentially change instructional styles.
8. Schools are run like businesses. Education is of secondary concern. Teachers unconsciously buy into the oppressive evaluative system that harms them.

Implications

Based on the key findings depicted above, I offer a discussion on the implications of these eight findings and offer humble (though admittedly imperfect) suggestions for how these issues might be practically addressed in Taiwan. Future research might evaluate particular attempts at finding solutions to these complex problems.

Challenges of Reforming Schools

From the participants' statements on their educational philosophy and my observations of the teachers' actual practice, I found that even though grand theories in the field of ELL address the importance of reforming classroom culture and dynamics into a student-centered, interactive, engaging and collaborative learning environment, teachers' thought patterns, practices, the goal of current curriculum development and the school culture do not. Even though "life-long learning," "self-directed learning," "learning by doing" and "technology-enhanced learning" have become ubiquitous slogans and the general public has been bombarded with these messages, I found that what actually happens in the classroom is a completely different story. In reality, the education system in Taiwan does not support or nurture these "ideal" educational concepts.

What I found in schools is that while policymakers and administrators endeavor to

fascinate students and parents with an alluring fantasy that technology implementation can guarantee a promising future for children in the 21st century, technology is still at the periphery of schooling in Taiwan. This imagined future suggests that when technology and globalization go hand-in-hand, technology implementation in schools will leverage students' competitiveness to a higher level. However, the findings of this study indicate that there is a gap between what has been promised by the policymakers and what is actually happening in schools. The occurrence of this gap implies that there are conflicts between policymakers and teachers with respect to their perceptions of schooling, curriculum, learning, the teachers' role, and the role and function of technology in schools. It is these conflicts of perceptions that lead to the failure of technology implementation in higher education in Taiwan as well as teachers' resistance, cosmetic compliance and passive aggression toward technology implementation.

In the following paragraphs, each of the conflicts will be elaborated and addressed in the hope that this will help us to further understand the challenges of education reform by way of enforcing the MOE evaluation and the promotion of technology implementation.

Ideological Conflicts of Schooling

First of all, we should revisit the purpose of technology implementation and how it has become aligned with the MOE evaluation. As the policymakers claimed, to promote technology implementation in the educational context is to promote student-centered, interactive, creative learning. It is for the benefit of students' learning and nothing else. However, as the findings of this study reveal, when technology implementation is re-examined in the context of the MOE evaluation, its purpose shifts and becomes aligned with the survival of the schools. The idea that "technology can safeguard the survival of schools" urges school administrators into developing a normative, model-based thinking of how schools should be run. This model-based thinking

accords with a market-driven purpose of education. This inevitably leads schools to meet the goal of *efficiency* and a myopic focus on *outcomes*. For example, in model-based thinking, popularity will be an indicator of needs and therefore schools are run like businesses and students are treated as customers. Another example is that in the evaluative context, schools see the implementation of technology as a means for ameliorating any deficiency, for creating a façade, fooling outsiders and thus meeting *standards* and guaranteeing success in the competitive, darwinistic, and very capitalist evaluation process. Other corner cutting behaviors are also prevalent in response to the top-down evaluation. When the MOE evaluation unintentionally reinforces schools' ideology of "efficiency says it all," it also results in a situation whereby meeting the goal comes first and education is of secondary concern. This finding clearly demonstrates the ideological conflicts between the ideal and the reality regarding the purpose of schooling and the role of technology implementation in schooling. So, before we probe into the discussion of reforming schools via the introduction of innovative instructional approaches, we should first question this market-driven, model-based thinking in terms of education.

Another reason for questioning the market-driven ideology of schools is related to my belief that context and culture are influential factors that determine and shape individuals' behavior. Organizational factors will be inevitably internalized by individuals within the organization and will greatly affect their perspectives and behavior. For example, student teachers eventually adopt the values prevalent in their own teaching community even though they expressed different values during their teacher education program. Take this study as an example. Teachers are trained to value students' learning process more than outcomes in their teacher education training. However, the findings of this study indicate that the idea of efficiency is embedded in teachers' classroom practice and management. Apparently, when being situated

in an evaluative context, teachers adopt market-driven thinking and the idea of efficiency from schools so as to survive the MOE evaluation. It is this idea of efficiency that gets in the way of successful technology implementation in schools. This is because even though technology has the potential to promote customization and a learner-centered approach to learning, schools are actually encouraging uniform learning for the purpose of efficient management. In addition, to efficiently manage a large class, teachers hold to their lecture-based instruction and one-way interactions. Given the fact that teacher centeredness and control is more time-saving and efficient, the openness, user-determined feature of computer technology in education is by no means prioritized as the first choice among teachers. Finally, to efficiently respond to the top-down evaluation, time and effort should go to things that can credentialize teachers. Minimal, cosmetic compliance becomes the best and the most efficient approach for surviving the MOE evaluation. The above examples show that regardless of how much potential computer technology may bring to ELL teaching and learning, it will be given low priority for meeting the goal of efficiency.

Since there is a conflict between policymakers' ideal promotion of technology implementation and how it is actually carried out in schools, we should carefully reexamine and reconsider the role of technology in education and the purpose of technology implementation.

Centralized Curriculum and Test-taking Standard

To further tackle what the idea of “efficiency” implies, a pattern of “dehumanization” can be found in the philosophy underpinning the design of the current education policy and curriculum. The focus on “efficiency” demonstrates that schools are encouraging everyone to learn the same thing at the same time, simply for the purpose of *efficient* management. In other words, schools are unconsciously promoting a dehumanizing process of learning and want to

make sure that everyone is on the same page. This pattern of “efficiency” can also be found in the MOE evaluation committee members’ suggestions for schools regarding the development of a unified, systematic and centralized curriculum. I strongly believe that this dehumanizing guiding principle should be called into question because this principle is nurturing *cookie cutter students* who cultivate their skills for memorization and test-taking. It is encouraging students to leave behind their pursuit of the development of higher order thinking ability. From this somewhat surprising finding, I think we should constantly ask ourselves: Is this dehumanizing process of learning really what we want from education? When the idea of “efficiency” is brought to schools, aren’t we treating students as the raw materials and teachers as the workers on the assembly line? Shouldn’t the government rethink the underlying assumptions of the policies that they are promoting?

If technology implementation is to promote “efficient” learning and implies a dehumanizing type of learning, we should also question the promotion of technology use in education contexts. It is important to note that one of the powers of technology use for learning is its capacity for customization. However, the promotion of uniformed learning, embedded in the MOE evaluation, contradicts this distinguishing feature of computer technology. It is this customization that gives learners the ability to pursue whatever interests them and gives learners the diverse and assorted supports they need to pursue their interests. In other words, technology has the capacity to take learners into a different pattern of learning by doing. This would be an active and much more learner-centered type of approach. It could provide students with the opportunity to develop the ability to negotiate different needs between groups and come to a consensus. In other words, the process could be open to negotiation and learning takes place during negotiation. Such lessons are not pre-designed but are open-ended. In that case, learning

is not pre-defined. It is constructed during the process. However, today's curricula still remain at the level of meeting a predefined framework with a focus on learning outcomes that are based on Tayloristic scientific management and measures. When learning is restricted to a particular predefined framework that puts more weights on outcomes via the examination of students' standardized test scores, we will overlook what students gain in the process of learning. The focus on learning outcomes, in other words, does not welcome the construction of knowledge via open negotiation with peers. Apparently, the current curriculum development and the pedagogical objectives in higher education in Taiwan are moving in the opposite direction away from the original intention of the promotion of technology implementation. It also weakens the potential of technology use for learning and it explains the reason why technology use in higher education in Taiwan remains at the drill-and-practice level. It is this conflict of perception regarding how individuals should learn that makes technology implementation fail in higher education in Taiwan.

Another key finding of the challenge of technology implementation in schools is in related to the promotion of standardized tests. As the existing literature has indicated (Cuban, 1986), successive waves of technology implementation have emerged only to gradually fade from view. When new waves of technology were introduced to schools, there has been little significant change of how teachers do their work. The findings of this study showed that it is because schools still measure student performance based on test-taking standards rather than on problem-solving and question-asking (not question-answering) behaviors in Taiwan. Schools develop ways of getting objective measures with multiple choice and short-answer questions. But technology should be leveraged to give learners the space to specialize and to focus on things that they really care about. Standardized assessment moves us in exactly the opposite way.

When the MOE evaluation uses the number of language proficiency certificates students receive as an indicator for determining students' academic performance and the quality of education schools provide, the MOE is in fact, encouraging recitation, memorization, and passive learning. The overemphasis on standardized assessment in the MOE evaluation criteria is not creating a space for students to learn how to think. When school culture remains centralized with a focus on outcomes rather than the learning process, no matter what type of technology emerges it will still have little impact on how we teach and how we learn in schools.

The Role of Teachers and How Technology is Used

Another challenge of technology implementation is the conflict between the traditional social expectation of the role of teachers and the affordances of technology in learning. Schools depend on teachers as experts to convey their expertise to students in the classroom, with a belief that the role of teachers is to transmit knowledge and to answer questions. From the findings of this study, I found that even with the use of computer technology, a traditional classroom culture of teacher centeredness and teacher control still remains. Teachers are the authoritative figure and the classroom dynamic often is dominated by one-way interaction. Teachers are still perceived as the dominant actors and students remain as passive learners. However, the goal of technology implementation is to give students access to diverse sources and knowledge that lead them through the learning process. Learning occurs when students actively take part in the learning process in the search of answers to their questions. In the world of technology, learners foster their ability to mobilize different resources to accomplish a goal. Education therefore, could become customized, highly interactive and learner-controlled. This "ideal" education dream remains chimerical because this study shows that technology neither transforms the classroom culture nor does it change teachers' instruction style. "Technology-enhanced learning has the

potential to foster a pattern of learning by doing and can engage students in a student-centered collaborative learning process” becomes just a slogan,

This problem occurs because policymakers and administrators do not involve teachers and students in the process of constructing technology-enhanced learning. They simply ask teachers to “implement” technology and therefore, turn teachers into passive adopters of technology. Teachers are not perceived as active contributors during the process of technology implementation initiative. Without engaging teachers to co-construct the technology implementation initiative, teachers tend to perceive technology implementation as a top-down requirement rather than a feasible innovative instructional strategy that can bring benefits to students’ learning. In addition, schools fail to assist teachers in seeing the potential of computer technology in education. Teachers are not informed that students can use tools to “create” and to “construct” knowledge and learning. Instead, while using technology, teachers’ perception of how instruction should be done still remains at a level of “transmitting” dead knowledge. In that sense, technology does not bring new insights to current pedagogy and instruction. When taking into account of the extra time investment and extra burden that technology implementation entails, technology use for instructional purposes is inevitably less desirable to teachers.

Redesigning Technology Implementation Initiative

The data of this study indicates that both the practice community and policymakers perceive a strong association between successful technology implementation and teachers’ computer literacy level, in particular, teachers’ capacity of knowing the functions of computer technology. However, the idea of *critical* implementation of technology is seldom brought up. Therefore, the promotion of technology implementation by the MOE of Taiwan is simply about using computers in the existing school context without being cognizant that a change of the

school culture is crucial to a successful instructional reform. If policymakers, administrators and the practice community all have a consensus on the promotion of technology use in higher education in Taiwan, we should redesign the current course of action of the technology implementation initiative. Simply “implementing” technology in the existing curriculum is problematic. We should “integrate” computer technology with the existing curricula in a way that fosters meaningful learning and facilitates interactive teaching. To extend and to maximize the potential of technology in education, experts in the field of educational technology should be invited to guide the professional development program and to provide consultation on *critical* technology implementation. The professional development program should offer ongoing hands-on training and appropriate coaching for teachers at different levels of computer literacy. Most importantly, the professional development program should also assist teachers in perceiving technology implementation from a more critical perspective. The professional development program should also inform teachers of how teaching and learning theories can be integrated in the design of technology-enhanced curriculum and what breakthrough this new technology-rich pedagogy can bring to their current teaching. Policymakers and schools should endeavor to build a solid infrastructure of technology implementation for teachers rather than putting teachers and students in a sink-or-swim position. In addition, the Ministry of Education and schools should prepare teachers and students for new ways of learning and allow new forms of interaction and learning to take place in school context. This includes mobile learning, game-based learning, learning in a virtual environment or an augmented reality environment, and other innovative approaches to learning that fit the diverse needs of individual students. All of these require an investment in human resources and time, a reduction of teachers’ heavy workload, and a strong determination to reform education.

Rethinking Standard Appraisal System

A pattern of corner cutting behaviors among teachers, staff and schools was identified as a finding of this study. This finding leads me to believe that problems caused by the consequential validity (Messick, 1989) of the MOE evaluation should be further discussed. The MOE evaluation is equivalent to a standardized test because it is using one standard to evaluate all of the universities in Taiwan. In other words, this “one size fits all” standard puts every school on the same scale and uses the same standard to measure schools’ performance regardless of their individual differences in terms of resources, location, organizational structure and student population. Whoever performs poorly on the MOE evaluation will be punished and those who successfully survive the evaluation can possess more resources. Even though the Ministry of Education in Taiwan attempts to guard against the dumbing down of education in Taiwan, the findings of this study show that the MOE evaluation actually leads to more corruption in schools. Linking a standardized evaluation, such as the MOE evaluation, to social Darwinism that addresses the negative impact of the idea of “survival of the fittest,” we can see how and why a centralized, standardized, top-down evaluation sabotages schools and educators. The punishing incentive structure of the MOE evaluation is making the elite schools stronger and the under-resourced, undermanned and underfunded schools less capable of surviving. Therefore, in meeting the standard and reaching the requirements, for survival reasons, under-resourced schools certainly will come up with alternative solutions during this “natural selection” process. When the underlying purpose of the MOE evaluation is to promote the idea of competition, and when schools’ performance is evaluated based on inappropriate quantitative measures, the MOE evaluation inevitably invites acts of getting around the evaluation by way of loopholes. It will also unintentionally result in a situation that all attention goes to things that are “more urgent”

and education is then of secondary concern. So, the idea of competition and the promotion of evolutionism embedded in the MOE evaluation are hurting education in Taiwan. We should constantly ask ourselves, “Does this dehumanizing evaluation process really make education in Taiwan stronger?” A serious re-examination of this problematic standard appraisal system should take place before the initiation of the evaluation and the promotion of technology implementation.

Limitations

The A-B-C model

The A-B-C model (Action-Belief-Context) was developed and served as the theoretical framework for this study before the beginning of my data collection in the field. Even though the theoretical framework could guide me, a novice researcher, through the whole study, it also inevitably restricted me to some degree during the whole process of data collection and data analysis in several ways. For example, during the early data collection phase, the A-B-C model implicitly guided the interviews in a particular way. This allowed me to reasonably manage the study and have some data to answer my predesigned research questions. However, it also prevented me from probing deep enough to get to the crux of the problem. Not until the participants brought up their struggles and concerns in the MOE evaluation process did I come to realize that there is such a strong correlation between the organizational problems in the higher education in Taiwan, the MOE evaluation, and teachers’ infrequent use of computer technology for instructional purposes.

In addition, the A-B-C model also implicitly framed and guided my writing in a particular direction that fit the pre-designed theoretical framework. When I used the semi-structured interview protocol to guide my on-site interviews, many meaningful and compelling

stories emerged that are about the participants' reflections when situated in an evaluative context. Those meaningful and compelling experiences and stories shed light on the issue of technology implementation as well as on the unknown stories of teachers' struggles and schools' dilemmas in response to the MOE evaluation. For example, teachers' perceptions of, concerns with and reflections on the MOE evaluation were unexpected themes that emerged from the data as the analysis went along. This part of the data is so compelling and powerful that it may help us better understand the reason why there is a gap between policymakers' expectations and teachers' actual use of computer technology for pedagogical purposes. Without having an understanding of teachers' struggles when they are situated in an evaluative context, it is impossible for me, a researcher and an outsider, to fully understand the reasons for teachers' infrequent use of computer technology in their daily professional practice.

In dealing with the emergent findings, I also found that some part of the data do not speak to the A-B-C model. This includes teachers' educational philosophy, their concerns about the MOE evaluation and the actions schools take in response to the MOE evaluation. These findings occupied a large part of the data, but they do not fall within the three categories (action, belief and context) of the A-B-C model. Therefore, I encountered the dilemma of directly excluding these findings from my dissertation or finding an alternative way to report the participants' experiences and opinions that did not fit in the A-B-C model. I personally believe that these stories behind the scene are compelling and should not be ignored because they can truly represent the problems and teachers' struggles on the front line. To remedy the limitation and restriction of the A-B-C model, I put these data in the introduction section of each case in order to provide readers a holistic view of the individual cases as well as the context my participants are situated in.

Methodology

Case study has its limitations. The small number of participants leaves us with questions about the generalizability of the experiences of the teacher participants in this study. To have an in-depth understanding of each case and its respective context, it's impossible to recruit a large number of participants in one study. Case study offers depth rather than breadth in research findings. Even though each individual participant has their unique experiences, their stories and experiences can still contribute to and provide insights for our understanding of the investigated issues. However, one of the limitations of this study is that it only investigated teachers' perspectives, concerns and actions with respect to the issue of technology implementation. This "teacher only" perspective, to some extent, limits our understanding and prevents us from having a holistic view of the issue of technology implementation in higher education in Taiwan. Future studies would be strengthened by taking into account multiple perspectives from different stakeholders, such as administrators, policymakers, students, parents and educators from different disciplines. In this way, we can gain more insights into the issue of technology implementation and how we should *do* education.

Political Context

The findings of this study demonstrate that the MOE evaluation unintentionally creates an oppressive context where teachers are placed at the very bottom of the hierarchical structure of the education system in Taiwan. While there is no teacher union to petition for teachers' requests or to protect teachers' rights and welfare, there is a great possibility that teachers' statements are politically self-censored. The MOE evaluation creates a top-down evaluative context and the resulting highly political context might indicate that teachers are not free to say more. Even though throughout the whole process of data collection, participants in this study

were all well-informed that their confidentiality is protected by IRB, there could be a possibility that participants were still hesitant to make judgments or to reveal some information on certain issues.

Future Research

A broader survey of teachers of different disciplines in Taiwanese schools about the processes of the top-down decision making and the standard appraisal system should be further conducted in order to help to give a picture of the situations not only in colleges of technology but in schools generally. Also, a further investigation should be conducted to survey teachers and administrators so as to understand how they view the criteria and process of the MOE evaluation. Do they really see the MOE evaluation problematic as the participants in this study depicted or do they perceive the evaluation as inevitable? What are their perceptions of other reform possibilities? Must education be done in this way? Are we really stuck with these problems or can we think of new ways to do education? More fundamental questions regarding the objectives of higher education and how and what we are going to teach our students should also be asked.

As participants in this study pointed out, the existing multimedia-based ELL teaching materials are not responding to their needs. What can experts in the field of educational technology do to provide insights regarding the design and development of appropriate tools for assisting ELL teachers' instruction in their respective contexts? Further research on the how Web 2.0 might impact ELL teaching and learning as well as how Web 2.0 can be integrated in school contexts for ELL teaching and learning should be investigated.

Research shows that learning occurs beyond the boundaries of the physical environment of schools via the use of computer technology and the Internet, but one may question why all the

participants in this study did not perceive students' use of computers and the Internet as serious learning but related it to entertainment. Why is there such a gap? How do teachers define "learning" and what are their perceptions of "learning through the use of technology" in schools? Future research should also explore this gap to illuminate the use of continually emerging technologies in education settings.

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