INVESTIGATING STAGES OF CONCERN AND TECHNOLOGY INTEGRATION SELF-EFFICACY BELIEFS OF ENGLISH LANGUAGE PRE-SERVICE TEACHERS

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ABSTRACT

INVESTIGATING STAGES OF CONCERN AND TECHNOLOGY INTEGRATION SELF-EFFICACY BELIEFS OF ENGLISH LANGUAGE PRE-SERVICE TEACHERS

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The aim of the study is to investigate Stages of Concern and technology integration self-efficacy beliefs of English language pre-service teachers. An embedded mixed methods design was implemented in which Stages of Concern Questionnaire and technology integration self-efficacy belief survey were utilized. 24 English language pre-service teachers participated in a semester long course in which they involved in Learning Technology by Design (LBD) activities. Results of the study indicated that there was a significant increase in "Consequence" stage from pre-test to post-test scores. However, the results showed no significant difference in Unconcerned, Informational, Personal, Management, Collaboration and Refocusing stages. There was also a significant difference in technology integration self-efficacy beliefs of pre-service teachers from pre-test to post-test scores. The findings from interviews provided in-depth insights about concerns and technology integration self-efficacy beliefs of pre-service teachers.

Overall, the present study explains that LBD activities implemented in the Instructional Principles and Methods course are influential on the technology integration process by helping pre-service teachers gain new knowledge and skills. Especially, the pre-service teachers involved in LBD activities acquired how to design

technology integrated lesson activities that can promote the learning and attitudes of students. Besides, the findings pointed out that it is particularly critical for pre-service teachers to be exposed to technologies throughout the curriculum in the college of education. Moreover, providing opportunities for pre-service teachers to observe the real classroom environments in which technology is integrated, to practice technology integrated lesson plans and supporting them in this process can increase the chance of sustaining their course of action for the future implementations.

Keywords: Stages of Concern, Technology Integration Self-Efficacy Belief, English Language Pre-service Teachers, English Language Teaching, Learning Technology by Design.

ÖZ

İNGİLİZCE ÖĞRETMEN ADAYLARININ KAYGI AŞAMALARININ VE TEKNOLOJİ ENTEGRASYONU ÖZ YETERLİLİKLERİNİN ARAŞTIRILMASI

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Bu çalışmanın amacı İngilizce öğretmen adaylarının kaygı aşamalarını ve teknoloji entegrasyonu öz yeterliliklerini araştırmaktır. Çalışmada gömülü karma araştırma yöntemi kullanılmış olup, Kaygı Aşamaları ve Teknoloji Entegrasyonu Özyeterliliği ölçeklerinden faydalanılmıştır. 24 İngilizce öğretmenliği öğretmen adayı, teknolojiyi tasarlayarak öğrenme (TTO) etkinliklerinin bulunduğu derse bir dönem boyunca katılmışlardır. Çalışmanın sonuçlarına göre; öğretmen adaylarının Sonuç kaygı aşamasının ön-test ve son-testleri arasında anlamlı farklılık bulunurken, diğer kaygı aşamaları olan Farkındalık, Bilgi, Kişisel, Yönetim, İşbirliği ve Yeniden odaklanmanda anlamlı farklıklıklar bulunmamıştır. Ayrıca öğretmen adaylarının teknoloji entegrasyonu öz yeterliliklerinde de anlamlı farklılık bulunmuştur. Görüşmeler neticesinde ortaya çıkan bulgular öğretmen adaylarının kaygıları ve teknoloji entegrasyonu öz yeterlilikleri hakkında önemli bilgiler sunmuştur.

Sonuç olarak, bu çalışma Öğretim İlke ve Yöntemleri dersi kapsamında uygulanan TTO etkinliklerinin teknoloji entegrasyonu sürecinde öğretmen adaylarının bilgi ve becelerine katkı getirdiğini açıklamaktadır. TTO aktivitelerine katılan öğretmen adayları, öğrencilerin öğrenmelerini ve derse olan tutumlarını olumlu yönde etkileyecek teknolojiyle bütünleştirilmiş ders tasarlayabilme konusunda bilgi sahibi

olmuşlardır. Bir diğer taraftan, çalışmanın bulguları öğretmen adaylarının eğitim fakültesi müfredatında teknoloji entegrasyonuna maruz kalmalarının önemini ortaya koymuştur. Son olaraksa, bulgular öğretmen adaylarına teknoloji ile bütünleştirilmiş dersleri gözlemesi, ders planlarının uygulanması için fırsatların sunulmasının ve bu süreç içerisinde desteklenmesinin onların gelecek uygulamlarındaki eylemlerini sürdürme şansını artıracağını belirtmiştir.

Anahtar kelimeler: Kaygı Aşamaları, Teknoloji Entegrasyonu Özyeterlilik, İngilizce Öğretmenliği Öğretmen Adayları, İngilizce Dili Öğretimi, Teknolojiyi Tasarlayarak Öğrenme.

To My Father, Naci KAYADUMAN

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My father had always wanted to see me graduate from Phd but could not see it. His passing left me a void in my life. Therefore, I dedicated this dissertation to him.

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CHAPTER 1

INTRODUCTION

Advances in Information Communication Technology (ICT) have supplied new opportunities for teachers and students to provide innovative and flexible learning environments that allow students to study collaboratively anytime and anywhere. Several articles in the literature state the benefits of using technology for educational purposes (Collins & Halverson, 2009; Godfrey, 2001; Lever-Duffy, Mcdonald, & Mizell, 2005). These studies illustrate that technology can improve student learning, motivation, problem-solving skills, and provide flexible learning environments in which students can move on according to their interests, pace, and needs.

Several ICT integration projects have been attempted all around the world to take advantage of new technologies to leverage education. One big budget project in the United States, Preparing Tomorrow's Teachers to Use Technology (PT3), funded by the U.S. Department of Education (USDE), has been implemented to integrate technology into education. The aim of this project was to prepare teachers for supporting teaching and learning processes with the help of technology (USDE, 2004 as cited in Mims, Polly, Shepherd, & Inan, 2006). In Turkey, a couple of initiatives to integrate technology into education have been applied up to now, as well. The first one is the National Basic Education Program (NBEP), which is funded by the World Bank in cooperation with the Ministry of National Education (MoNE) and conducted across Turkey. The main purpose of this project was to improve the overall quality of education by benefitting from technological devices and software (MoNE, 2007).

Currently, there is another project in progress in Turkey. It is the Movement of Enhancing Opportunities and Improving Technology or, FATIH (Fırsatları Artırma ve Teknolojiyi İyileştirme Hareketi) in Turkish. The purpose of this project is to supply ICT equipment and e-content to promote teaching and learning process in all public schools of Turkey (MoNE, 2013). These sort of projects have increased the number of available technological tools and the possibility of accessing the internet environments, especially in public schools. In short, governments are allocating a significant amount of resources in order to take advantage of ICT for educational purposes. However, the critical point here is that, as Toci and Peck (1998) pointed out, providing technologies to schools or institutions does not guarantee that they are used effectively to foster teaching and learning process. To attain the goals of the projects, it is important to understand the implementations and facilitate the processes related to the integration.

1.1 Background of the Study

An increasing number of technological tools in schools and advancements in high-speed bandwidth connections spread out the usage of Web 2.0 tools in educational settings as well as other areas. With the advent of Web 2.0 tools, new tools were developed and began to be implemented as a medium of teaching and learning. Numerous research studies revealed that Web 2.0 tools provided effective ways to foster teaching and learning processes in educational environments. Johnston and Cooley (2001) pointed out that Web 2.0 tools facilitate engaged learning principles which allow students to engage in collaborative activities which improve their higher order thinking skills and creativity. O'Reilly (2005) explains that Web 2.0 tools provide a collaborative learning environment in which people can study and interact with each other. Richardson (2006) emphasized that Web 2.0 tools offer powerful learning environments in which students and teachers can study collaboratively and subsequently improve their problem-solving skills. Selwyn (2008) stated that students could be involved in learning activities by creating, refining, and distributing the content with the help of the Web 2.0 tools. Their roles change from passive to active while engaging in these sort of learning activities. The potential of Web 2.0 tools has also been explored in the context of language learning (Ducate and Lomicka, 2008; Jauregi and Banados, 2008; Antenos-Conforti, 2009; Dippold, 2009; Kessler, 2009;

Abdous, Camarena, & Facer, 2009) where learners can access learning materials easily with the help of Web 2.0 tools that would otherwise be more difficult.

As it is well-known, various type of Web 2.0 tools have been developed and utilized by individuals in their daily life activities; however, increasing availability of tablet computers, interactive boards and high-speed bandwidth connections in public schools with the help of technology integration projects; expanding the usage of Web 2.0 tools for educational purposes as well. When a new technology is integrated into educational activities, it is usually the duty of teachers to carry it out successfully. This situation has led to a change in the responsibilities of teachers who perform in their instructions. It can be difficult for teachers because there may be discomfort and concerns related to integrating technologies into instructions (McArthur, 2008).

Most people, particularly teachers, generally want to do things properly. When teachers are asked to use an innovation in their instructions such as Web 2.0 tools, they usually try to comply with the request; however, the problems start with the details of the implementation (Hall & Hord, 2001). Casey and Rakes (2002) posited that people are naturally resistant to change because change is accompanied by uncertainty. Rogers (2003) explained that people are typically rather unwilling to use innovation upon first encounter. Similarly, Yang and Huang (2008) said that technology implementation requires change for teachers. Considering this situation, it could be stated that ICT integration projects can make teachers alter their current methods and involve in a change process.

Change is described as improving new insights and making things in different ways. Change is a process that people and organizations move through while they are learning and becoming more skillful with the use of new technologies and pedagogical practices (Hall & Hord, 2014). Regarding the change process, some concerns may arise in terms of practitioners while using technological tools for their instructions because change brings unknown (Casey and Rakes, 2002). Technological tools may be promising innovations and provide several advantages, but concerns of practitioners may prevent successful implementation. Wexler (2003) pointed out that it is difficult to integrate any new technologies, and its successful integration is affected by attitudes and concerns of educators. Hall (1976) expressed that people's

concerns directly influence their performances. Hall & Hord (1987) stated that feelings and perceptions of teachers in regard to an instructional innovation determine whether the change takes place in a classroom or not.

When a technology integration project fails in education, teachers are mostly considered as the main reason because they implement an innovation in their instructions and their concerns related to the implementation influences their performance (Hall, 1976; Hall & Hord, 1987; Wexler, 2003). In addition, pre-service teachers play an essential role in the success of technology integration projects as well and their readiness to integrate technology influences future implementations (Gulbahar, 2008). Considering this critical situation, teacher education institutions have developed different sort of courses and interventions with the view of helping pre-service teachers learn how to integrate technology and accordingly facilitate the change process. However, when reviewing the literature, numerous studies can help us understand the current situation about how effective these programs are for the pre-service teachers. Lee and Lee (2014) stated that teacher education institutions have different sorts of educational technology courses. These courses are generally based on technical skills and general theories on teaching with technology. Kalota and Hung (2013) pointed out that many of the courses for pre-service teachers are skill based. They are simply taught how to use the software applications. It is reported that pre-service teachers often are not able to develop technology integration skills due to not having enough support when taking the related courses. Han, Eom, and Shin (2013) illustrated that teacher preparation courses emphasize basic computer skills. Friedman and Kajder (2006) reported that there are some models and approaches in pre-service teacher preparation programs, but mostly these are not helpful to prepare them to use technology in education. Hope (1997) pointed out that technologies are introduced, but superficial attention is given to the practitioners of them who are expected to carry out the process. In short, recent studies indicate that pre-service teachers are not well-prepared to integrate Web 2.0 tools into their future instructions(Goktas, Yildirim, & Yildirim, 2009; Lei, 2009). Thus, when pre-service teachers enter the classroom at the end of this process, they may be reluctant to integrate any technologies into their instructions or use them for low-level routines. Accordingly, teacher education

programs seek new ways to prepare pre-service teachers for their future implementations (Gulbahar, 2008).

At this juncture, the challenge is figuring out how to effectively describe successful implementation techniques and to address the concerns of pre-service teachers, who are necessary for successful and sustained implementation in education. Hord, Rutherford, Huling-Austin, and Hall (1987) stated that it is a mistake to neglect the emotions of practitioners about the impact of innovations on them and their work. Hall & Hord (2014) noted from Fuller studies that the design of teacher education programs should be parallel with the developing concerns of pre-service teachers rather than being parallel with the professors' concerns. Boz and Boz (2010) explained that concerns and sense of self-efficacies of pre-service teachers are one of the crucial considerations in teacher education programs. Furthermore, Ghaith and Shabaan (1999) pointed out that resolving pre-service teachers' concerns impacts their sense of self-efficacy and subsequently increases the chances of successful implementation. Therefore, it becomes a crucial consideration to investigate the concerns of pre-service teacher for more appropriate programs to prepare them for the technology integration.

To date, various research studies about teacher's concerns have been carried out. France Fuller became a pioneering researcher in this field after she defined the concerns of pre-service teachers. Fuller conducted several in-depth studies and proposed various kinds of concerns of pre-service and in-service teachers related to educational change. Her research studies on concerns formed the Concern Based Adoption Model (CBAM). CBAM proposes a set of concerns which emerge in the process of change. It is stated that concerns change as individuals become more skillful in using innovations (Hall, George, and Rutherford, 1977). The concern is defined as "*the composite representations of feelings, preoccupations, thoughts and considerations given to a particular issue or task*" (Hall and George, 1979, p.8). CBAM has three basic components, which are Stages of Concern (SoC), Level of Use (LoU), and Innovation Configuration (IC). SoC is a commonly used component of CBAM and considered as the personal side of change. Hall, George, and Rutherford (1977) state that SoC defines the various kinds of feelings or perceptions which come along with the change process. SoC consists of seven different stages which are Unconcerned, Informational, Personal, Management, Consequence, Collaboration,

and Refocusing. George, Hall and Stiegelbauer (2006) stated that SoC is termed as stages because there are developmental movements among stages. In other words, an individual experiences a particular type of concern quite intensely at a time, then as that concern subsides, another concern arises. In addition, Hollingshead (2009) expressed that seven SoC are not superior to one another, but practitioners move along through these stages at different intensities.

In the CBAM model, being concerned is described as "*to be in a mentally aroused state about something*" (Hall & Hord, 2014, p.85). Chen and Jang (2014) pointed out that SoC could be the critical framework for addressing needs and wishes of practitioners to promote their professional development. Hollingshead (2009) emphasized that SoC is an important model to determine the current perspective of practitioners on using technology. Yang and Huang (2008) stated that using the SoC model to reveal the current concerns of practitioners can be critical to develop the higher level concerns for the purpose of successful technology integration. Therefore, using the SoC model as a diagnostic tool can provide the means to determine attributes that facilitate an increased rate of integration of technologies like Web 2.0 tools for future implementation. This is significant because the feelings and perceptions of implementers in consideration of technologies determine how the change takes place in a classroom (Hall & Hord, 1987). In line with this direction, determining and interpreting the concerns of pre-service teachers via SoC model might be a major consideration when designing and developing future relevant programs (Hall & Hord, 2014).

Developing technology integration skills of pre-service teachers requires involving different types of instructional activities into teacher education programs. Providing opportunities to pre-service teachers to participate in a learning environment in which they can design and implement different methods and strategies can increase the chances of successful implementation of technology integration (Quadrini, 2013). Similarly, George, Hall and Stiegelbauer (2006) also suggest that resolving concerns are not achieved simply by having more knowledge or spending more time with innovation. In this regard, the present study was based on the Instructional Principles and Methods course, in which Learning Technology by Design (LBD) approach was integrated to provide opportunities for English Language pre-service teachers to

develop the necessary skills and comfort level to integrate Web 2.0 tools into their instruction.

The Instructional Principles and Methods course includes foundations of instruction, principles of effective learning and teaching, instructional methods, strategies, and planning. This course develops understandings about content organization, choosing appropriate instructional methods and strategies, selection of materials and analyzing their properties, and measurement and evaluation (YÖK, 1998). The present study was based upon this course because pre-service teachers are supposed to learn all aspects of designing a lesson plan in the context of this course. In addition, the LBD approach was incorporated into course activities so that pre-service teachers could acquire knowledge of integrating Web 2.0 tools into their English language instructions while they form new insights about designing lesson plans.

Kolodner (2002) first used the LBD approach for teaching science content to middle school students. In LBD, students work collaboratively to learn the content by exploring, designing, revising and reflecting. LBD is also stated as an effective method of developing technology integration skills of practitioners. Koehler and Mishra (2005) pointed out that "*This framework attempts to capture some of the essential qualities of teacher knowledge required for technology integration in pedagogy*" (p. 95). They expressed that the point of LBD in teacher education was to develop an understanding of instructional technology and to enhance pre-service teachers' capabilities of technology integration. Koehler and his colleagues (2004) underlined that teachers work collaboratively in LBD activities to find possible solutions to a problem by integrating different technological tools to foster teaching and learning processes. Alayyar (2011) reported that LBD might be used in teacher education so that pre-service teachers could improve their technology integration skills and change their attitudes toward technology to implement in their future teaching. Johnson (2012) stated that LBD could provide unique opportunities to support an attitudinal change regarding the use of technology for pre-service teachers. Therefore, providing opportunities to design technology-integrated lesson plans may facilitate the change process of English language pre-service teachers (Quadrini, 2013). Understanding the reasons behind their concerns in this process can uncover any hidden issues that might obstruct future technology integration decisions and implementations.

All in all, considering all the information stated above, it could be concluded that Web 2.0 tools provide new ways to promote teaching and learning processes (Dippold, 2009; Kessler, 2009; O'Reilly, 2005; Richardson, 2006; Selwyn, 2008). With the help of the technology integration projects (USDE, 2004 as cited in Mims, Polly, Shepherd, & Inan, 2006; MoNE, 2007; MoNE, 2013), Web 2.0 tools disseminated in educational settings. In order to attain the goals of the projects, it is important to understand the implementations and facilitate the processes related to the integration of Web 2.0 tools. In this direction, integrating Web 2.0 tools into instructions could be difficult because there may be discomfort and concerns regarding practitioners. Web 2.0 tools may be promising innovations and provide several advantages, but concerns of practitioners may prevent successful implementation (Hall, 1976; McArthur, 2008; Wexler, 2003). Because concerns influence the sense of self-efficacy and eventually the performance (Bandura, 1997; Boz & Boz, 2010; Ghaith & Shaaban, 1999; Hall, 1976; Hall & Hord, 1987; Wexler, 2003), it becomes a crucial consideration to investigate the concerns and sense of self-efficacies for successful and sustainable technology integration.

1.2 Purpose of the Study

The present study focused on the development of concern stages and self-efficacy beliefs of English language pre-service teachers. In this direction, the purpose of the study is to examine the influence of LBD activities carried out in the context of Instructional Principles and Methods course on pre-service teachers' stages of concern and self-efficacy beliefs for technology integration in English Language Teaching. To this end, while quantitative data were collected from stages of concern questionnaire (George, Hall and Stiegelbauer, 2006) and technology integration self-efficacy belief survey (Wang, Ertmer and Newby, 2004), qualitative data were collected from focus group and individual interviews.

1.3 Research Questions

The following research questions guided the present study:

1. Is there a significant difference in pre-service teachers' Stages of Concern Questionnaire scores for technology integration in English Language Teaching

after attending Learning Technology by Design activities implemented in the Instructional Principles and Methods course?

2. How do Learning Technology by Design activities implemented in the Instructional Principles and Methods course influence the pre-service teachers' stages of concern for technology integration in English Language Teaching?
3. Is there a significant difference in pre-service teachers' Technology Integration Self-Efficacy Beliefs Survey scores after attending Learning Technology by Design activities implemented in the Instructional Principles and Methods course?
4. How do Learning Technology by Design activities implemented in the Instructional Principles and Methods course influence the pre-service teachers' technology integration self-efficacy beliefs?

1.4 Significance of the Study

Web 2.0 tools provided new ways to promote teaching and learning processes. It is stated in various research studies that Web 2.0 tools create new learning environments in which individuals can be involved in learning activities and subsequently improve their necessary skills by collaborating and interacting with other individuals (O'Reilly, 2005; Richardson, 2006; Selwyn, 2008; Dippold, 2009; Kessler, 2009). With the help of the technology integration projects, Web 2.0 tools can be disseminated in educational settings. To attain the goals of the projects, it is important to understand the implementations related to the integration of Web 2.0 tools to facilitate the change process.

Pre-service teachers are considered to be an integral part of technology integration and their preparedness influences the future implementations of technological tools in educational settings (Gulbahar, 2008). Teacher education institutions offer different sorts of courses and interventions to enhance the technology integration skills of pre-service teachers. Although various research is available related to the courses and interventions (Koehler and Mishra, 2005; Goktas, Yıldırım, and Yıldırım, 2009; Alayyar, 2011; Johnson, 2012; Han, Eom, and Shin, 2013; Kalota and Hung, 2013; Lee and Lee, 2014), very little is known about the specific concerns of pre-service teachers when implementing technology integration activities. Because concerns

influence the sense of self-efficacy and eventually the performance (Hall, 1976; Hall and Hord, 1987; Ghaith and Shabaan, 1999; Wexler, 2003; Boz and Boz, 2010), investigating the pre-service teachers' concerns and sense of self-efficacies in the process of LBD activities might be valuable in gaining comprehension of their concern stages. Furthermore, obtaining information regarding the concerns of pre-service teachers can uncover any hidden issues that might obstruct future technology integration decisions and implementations.

The Stages of Concern (SoC) have been used in many different settings to determine the concerns of individuals toward a variety of innovations. Although the majority of research studies employed quantitative research designs (Kayaduman and Delialioglu, 2016; Dunn and Rakes, 2010; Al-rawajfih, Fook, and Idros, 2010; Aziz, 2008; Yang and Huang, 2008; Lau and Shiu, 2008; Casey and Rakes, 2002; Toms, 1997) in order to diagnose individuals' concerns and facilitate their adoption process, few utilized mixed methods and qualitative research designs (Borgerding, Sadler, and Koroly, 2013; Charalambous and Philippou, 2010; Overbaugh and Lu, 2008). In addition, it is also rare to find research studies in which both stages of concern and self-efficacy beliefs of individuals incorporated. Therefore, implementing embedded mixed methods research design in the present study could be more beneficial in order to understand the concerns of pre-service teachers, the reasons behind their concerns, the relationship between concerns stages and technology integration self-efficacy beliefs.

The Stages of Concern Questionnaire (SoCQ) was utilized to ascertain the concerns of English language pre-service teachers when integrating Web 2.0 tools into English Language Teaching. Insights from the present study can help to design and develop more appropriate programs, courses and interventions (Hall and Hord, 2014), which is critical in order to reduce the concerns of pre-service teachers and increase the probability of successful implementation of Web 2.0 tools in the future English language teaching classrooms. In addition, the results of the present study can contribute to both the research knowledge base in regard to integration of Web 2.0 tools into English language teaching classrooms and LBD approach for the future implementation efforts. Furthermore, the findings and implications of the present study can promote technology integration planning and development of new policies in education by providing valuable information for the faculty members, policy

makers, program developers, and educational planners who concern about the successful and sustained technology integration in education.

1.5 Definition of Terms

In this section, some of the critical terms are described in order to help readers understand the study and ease the process of interpretation.

Pre-service Teacher: Pre-service teacher is a student teacher preparing to be a certified teacher by involving learning and teaching activities in college of education.

Innovation: Innovation is an application, concept or object that one perceives as new (Rogers, 2003).

Concern: It is defined "*the composite representations of feelings, preoccupations, thoughts and considerations given to a particular issue or task*" (Hall and George, 1979, p.8).

Concern based Adoption Model (CBAM): It is a framework which describes, explains the change process and provides diagnostic data for interventions (Hall, George and Rutherford, 1977).

Stages of Concern (SoC): Stages of concern are developmental patterns of individuals' feelings and perceptions which evolve in the process of change. It is described as the personal side of change and consists of seven stages. These stages are Unconcerned, Informational, Personal, Management, Consequence, Collaboration, and Refocusing (Hall and Hord, 2014).

Self-Efficacy: It is described as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1977, p.3).

Web 2.0 tools: It is defined as read and write web that is scalable, participatory and cost-effective (O'Reilly, 2005).

1.6 Organization of the Study

In this study, Chapter 1 represents the background, purpose, research questions, significance and definitions of the study. Chapter 2 explains Web 2.0 tools integration,

technology integration in teacher education, learning technology by design, technology integration self-efficacy belief, educational change theories and related literature. Chapter 3 delineates the research design, participants, implementation procedure, data collection instruments, data analysis, researcher role, validity, reliability, and lastly limitations of the study. Chapter 4 represents the results of study. Lastly, Chapter 5 discusses the findings, explains the implications and recommends for further research studies.

CHAPTER 2

LITERATURE REVIEW

The purpose of the present study was to investigate Stages of Concern (SoC) and technology integration self-efficacy beliefs of English language pre-service teachers. Specifically, the present study examined English language pre-service teachers concern stages and technology integration self-efficacy beliefs when involved in learning technology by design (LBD) activities in the context of Instructional Principles and Methods course. This chapter includes an in-depth literature review about Web 2.0 tools integration, technology integration in teacher education, learning technology by design, technology integration self-efficacy belief, educational change theories, diffusion of innovation, CBAM, and stages of concern related literature. This chapter concludes by reviewing the related research studies.

2.1 Introduction

The field of educational technology has been contributing to the education by aiming to facilitate learning and improve the performances of individuals. Hence, it could be stated that it deals with both media and method. In this direction, there is a critical debate between media and method in the literature. At this point, while Clark (1983) asserted that media did not influence the learning under any condition; conversely, Kozma (1994) stated knowledge and learning were interacted with each other and this interaction was influenced by internal and external resources. In educational settings, each individual can be considered as unique in terms of prior knowledge, needs, motivation or etc. Moreover, since learning process is influenced by duration, structure

of information and amount of time (Kozma, 1991), it could be expressed that both media and method are influential on the learning process. The critical element here is that media should increase the effectiveness, efficiency and pace of instructional methods and strategies so that it can promote the learning of individuals. Otherwise, it may not be practical to integrate any kind of media into educational settings. Therefore, it could be concluded that media and method are critical in the learning process, and media should reinforce methods so that it can be influential in the teaching and learning process.

2.2 Web 2.0 Tools Integration

Web 2.0 is defined as read and write web, which is scalable, participatory and cost-effective. Blogs, wikis, podcasts and social networks serve as examples of Web 2.0 tools. The difference between Web 1.0 and Web 2.0 is that Web 1.0 tools allow users to only consume information, while Web 2.0 tools let users produce information at the same time. With the help of the Web 2.0 tools, people have the opportunity to publish their ideas, share their resources and collaborate with their colleagues (O'Reilly, 2005). The decrease of costs in Information Communication Technologies (ICT) and attempting technology integration initiatives across the world in education (USDE, 2004 as cited in Mims et al., 2006; MoNE, 2007; MoNE, 2013) have increased the availabilities of Web 2.0 tools in educational areas. The availability of ICT and high-speed bandwidth connections has also led to an increase in the use of Web 2.0 tools widely for educational purposes. Considering the collaborative and interactive features of Web 2.0 tools, numerous research studies have been carried out to examine the potential impact of Web 2.0 tools on teaching and learning. The potential of Web 2.0 tools could be summarized as follows:

- Web 2.0 tools can improve the higher order thinking skills of learners by facilitating engaged learning principles in collaborative learning environments (Johnston and Cooley, 2001).
- Web 2.0 tools can provide a collaborative and an interactive learning environment in which learners study by interacting with other learners (O'Reilly, 2005).

- Web 2.0 tools provide dynamic learning environments in which students can study collaboratively with their peers and interact with their teachers and accordingly they can improve their problem-solving skills (Richardson, 2006).
- Web 2.0 tools can improve the critical thinking skills of students by encouraging them to work collaboratively (Penrod, 2007).
- Web 2.0 tools could enable learners to be active in the learning process (McGee and Diaz, 2007).
- Web 2.0 tools could provide opportunities for students to create, refine, and distribute the content by engaging them in learning activities (Selwyn, 2008).

In addition, the potentials of Web 2.0 tools were also investigated in the scope of language learning. For example; Ducate and Lomicka (2008) carried out a year-long research study to investigate the impact of blogging on students' creativity and foreign language skills. The findings of the study suggested that reading and writing blogs promoted the creativity and foreign language skills of students. Jauregi and Banados (2008) explored the potential of a web communication tools on learning and motivation of learners in the context of teaching a foreign language. The results showed that web tools used in the study contributed to the learning outcomes and motivation of learners. Antenos-Conforti (2009) investigated micro-blogging, Twitter, for language and culture learning. The results of the study revealed that learners improved their grammar and vocabulary skills and became more confident about communicating with in the foreign language. In another study, Dippold (2009) examined the usefulness of blogging for giving and receiving feedback in the context of language learning and discovered that blogging has a contributing potential for peer feedback. Lastly, Abdous, Camarena, and Facer (2009) conducted a research study in order to investigate the effectiveness of integrating podcasts into the curriculum. The results of the research study recommended that students are more likely to take advantage of podcasting when they are integrated into language learning curriculum and, accordingly; improve their language skills. Therefore, it could be concluded that Web 2.0 tools have significant potential to promote teaching and learning processes, especially in the context of language learning. Accordingly, it becomes important to prepare in-service and pre-service teachers to adopt these tools for their instruction.

2.3 Technology Integration in Teacher Education

According to Prensky (2001), today's students are no longer well suited for the traditional education system. They spend most of their time using digital tools and the way they think and process information is fundamentally different from their predecessors. According to the report of Levin, Arafeh, Lenhart, and Rainie (2002), there is an expanding gap between students and teachers in terms of technology integration understanding for instructions. Subsequently, the dynamics between teachers and students are affected by this gap since today's students are willing to integrate technologies into their learning process while most of the teachers are not ready for it. In that regard, Kurt (2012) revealed that teachers generally use technologies for administrative work, preparing instruction, student homework and assessment. Karaca (2011) said that primary school teachers generally use technologies for preparing lesson plans, exam questions, internet searches, and entering student grades. Dawson (2008) examined the science teachers' ICT use and found that teachers mostly used word processing, internet search, mail and PowerPoint. The International Society for Technology in Education (ISTE) (2008) declared that teachers, both in-service and pre-service, should be educated to integrate technology effectively into their instructions as a standard part of their pedagogical training. Therefore, teachers are now supposed to update their traditional methods and use new instructional methods and strategies that are complied with the current technologies in order to be able to appeal the needs of today's students. In this direction, McArthur (2008) pointed out that there might be discomfort and concerns related to integrating technologies into instructions for implementers who are not familiar with the digital technologies. Therefore, it becomes critical to educate teachers in order to be able to integrate technologies into instructions.

In teacher education institutions, many programs and courses have been developing for pre-service teachers in order to prepare them to integrate technology into their future instructions. Regarding these programs, Lee and Lee (2014) expressed that teacher education institutions have different sorts of educational technology courses but these courses are generally based on technical skills and general theories on teaching with technology. Kalota and Hung (2013) pointed out that many of the courses for pre-service teachers are skill based. Pre-service teachers are simply taught

how to use the software applications. Han, Eom, and Shin (2013) illustrated that teacher preparation courses emphasize basic computer skills. Goktas, Yıldırım, and Yıldırım (2009) reported that teacher education programs do not sufficiently enhance technology integration capabilities of pre-service teachers. It is thus evident that teacher education programs are in need of new approaches for educating pre-service teachers.

2.4 Learning Technology by Design

Although there are different applications in the literature to facilitate the process of technology integration for pre-service teachers, Technological Pedagogical Content Knowledge (TPACK) could be considered the prominent framework due to the research-based implications to design educational technology courses. This framework asserts that successful technology integration requires a complex knowledge which is the combination of technology, pedagogy, and content knowledge (Mishra and Koehler, 2006). Mishra and Koehler (2006) pointed out that technology, pedagogy and content knowledge in teacher education programs should be integrated rather than isolated from each other. As mentioned earlier, the research articles in the literature illustrated that technology knowledge is mostly considered as separate from pedagogical and content knowledge (Lee and Lee, 2014; Kalota and Hung, 2013; Han, Eom, and Shin, 2013). In this direction, learning technology by design (LBD) has been proposed to help teachers integrate technology, pedagogy and content knowledge in the process of technology integration. Koehler and Mishra (2005) pointed out that "*This framework attempts to capture some of the essential qualities of teacher knowledge required for technology integration in pedagogy*" (p. 95). They further explained that LBD in teacher education could enhance the pre-service teachers' capabilities of technology integration. Kolodner (2002) first presented LBD in order to teach science to students. The basic premise of LBD relies on learner experiences as a designer. In LBD, learners are involved in design challenges by using their knowledge and design skills to learn the content in a meaningful way. Han and Bhattacharya (2001) state the components of LBD learning environment as the follows:

- Authenticity: Learners are involved in a task related to real world context.

- Multiple Context: Learners have opportunities to apply their knowledge to multiple contexts in order to conceive different strategies for the content.
- A balance between constrained and scaffolded challenges: Learners are provided sufficient guidance and appropriate design challenges. There should be balance between guided practice and challenges.
- Feedback: Learners receive feedback from their both peers and instructors about their product and learning process.
- Discussion and collaboration: Learners discuss and collaborate with their peers so that they can learn from each other.
- Exploration: Learners explore and experiment with the content they try to learn.
- Reflection: Learners reflect the knowledge gained from LBD activities.

These components of LBD provide rich opportunities for learners to grasp the content in a meaningful way.

According to Quadrini (2013), pre-service teachers need to be involved in different types of instructional activities in order to develop the necessary technology integration skills. In the activities, they need to design and implement technology integrated methods and strategies so that they learn how to integrate technology for improving the teaching and learning process. In this direction, there are research studies in the literature, which illustrate the benefits of LBD in teacher education. Koehler and Mishra (2005) stated that LBD enhances the pre-service teachers' technology integration capabilities. Alayyar (2011) pointed out that LBD could be beneficial for pre-service teachers in teacher education institutions. With the help of the LBD activities, pre-service teachers' attitudes toward technology and their technology integration skills could be improved positively. Similarly, Johnson (2012) expressed that LBD could provide critical learning opportunities for pre-service teachers to support an attitudinal change regarding the use of technology for pre-service teachers. Considering the benefits of LBD, the learning activities in the present study were grounded in LBD in order to provide opportunities for English Language pre-service teachers to develop the necessary skills and comfort level to integrate Web 2.0 tools into their future instruction.

On the other hand, although many researchers examined the effects of LBD and found that LBD has an impact on technology integration skills (Koehler and Mishra, 2005; Alayyar, 2011; Johnson, 2012; Uygun, 2013), it is rare to find research studies that investigate how concerns of pre-service teachers develop in this process. Pre-service teachers might obtain critical technology integration skills as a result of implementing LBD, however; their concerns may influence their decisions and future usage. At this point, Hall (1976) expressed that people's concerns directly influence their performance. Hall and Hord (1987) stated that feelings and perceptions of individuals determine how innovation will be implemented in the classroom. Wexler (2003) pointed out that successful technology integration is affected by attitudes and concerns of educators. In that regard, investigating the concerns of pre-service teachers emerged in the process of LBD and understanding the reasons behind them could increase the chances of successful implementation of Web 2.0 tools in future English language teaching classrooms.

2.5 Technology Integration Self-Efficacy Belief

One of the critical factors affecting the success of technology integration is teachers. Research studies have a long list of factors originated from teachers that affect their technology integration decisions (Karaca, Can, and Yıldırım, 2013; Inan and Lowther, 2010; Hermans, Tondeur, van Braak, and Valcke, 2008; Chen, 2008). Self-efficacy belief is one of the critical factors that have an impact on teachers' decisions and actions about technology integration. In this direction, Albion (1999) stated that the beliefs of teachers about their capacity, which is self-efficacy, regarding technology integration are an influential factor for the practice of technologies in the classroom. He further explained that lack of self-efficacy belief results in inability to use technology. Similarly, Hall (2008) found out that high self-efficacy belief could help teachers integrate technologies more effectively.

Regarding technology integration in education, it could also be said that preparing pre-service teachers for their future instruction supported by technologies have critical importance. In the literature, there are several articles which state the significance of increasing self-efficacy beliefs of pre-service teachers for successful technology integration applications. Anderson and Maninger (2007) found out that self-efficacy

belief of pre-service teachers is correlated with their intentions of using technology. Furthermore, they revealed that the best predictor of future intentions is self-efficacy belief of pre-service teachers. Teo (2009) examined the factors regarding technology integration acceptance of pre-service teachers and found out that self-efficacy beliefs of pre-service teachers have an impact on their technology acceptance. Sang, Valcke, van Braak, and Tondeur (2010) carried out a research study about determining the influential factors of technology integration. The results of the study showed that prospective technology integration is related to self-efficacy beliefs of pre-service teachers. Abbitt (2011) pointed out that self-efficacy beliefs of pre-service teachers play an important role in their actions about technology integration. Therefore, it could be concluded that self-efficacy belief is one of the major factors which influence the success of technology integration in educational settings.

According to Bandura (1997), self-efficacy is described as "*beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments*" (p.3). Bandura (1977) explained that efficacy expectations of people are one of the major factors which influence peoples' decisions about how much effort they will put forth and how long they will persist in completing a task. He further expressed that self-efficacy beliefs affect the emotions of people and subsequently their behaviors and decisions to maintain the course of actions. Bandura (1977) described four critical sources of information which could help to develop the self-efficacies of people:

- Performance Accomplishment: It relies on the personal mastery experiences of people. Accomplishing a task as a result of an action increases people's expectations of mastery, conversely; recurring failures reduces it. Bandura pointed out that experiences gained by performances of people are particularly influential on the self-efficacy. He suggested "*participant modelling*", "*performance desensitization*", "*performance exposure*", and "*self-instructed performance*" to develop self-efficacy beliefs of people based on performance accomplishment (Bandura, 1977, p.195).
- Vicarious Experience: People not only rely on their mastery experiences but also vicarious experiences. In other words, people could develop their self-

efficacies by observing other people and seeing their performance accomplishments. Bandura suggested "*live modeling*" and "*symbolic modeling*" as two approaches for this experience in regard to developing self-efficacy beliefs of people (Bandura, 1977, p.197).

- Verbal Persuasion: People could be directed through suggestions which help them persist in completing a task. Although Bandura sees verbal persuasion as weaker than performance accomplishment and vicarious experiences, he still recommends it since it is easy to be implemented in most cases to develop the self-efficacies of people. He recommended "*suggestion*", "*exhortation*", "*self-instruction*", and "*interpretive treatments*" approaches for this experience in regard to developing self-efficacy beliefs of people (Bandura, 1977, p.198).
- Emotional Arousal: People sometimes rely on their physiological states which might affect their self-efficacy beliefs. Bandura states that high emotional arousal may debilitate the performances of people. He recommended "*attribution*", "*relaxation*", "*symbolic desensitization*", and "*symbolic exposure*" approaches for this experience in regard to developing self-efficacy beliefs of people (Bandura, 1977, p.198).

These sources of information and their approaches in order to develop the self-efficacy beliefs of people were summarized in Figure 2.1 below.

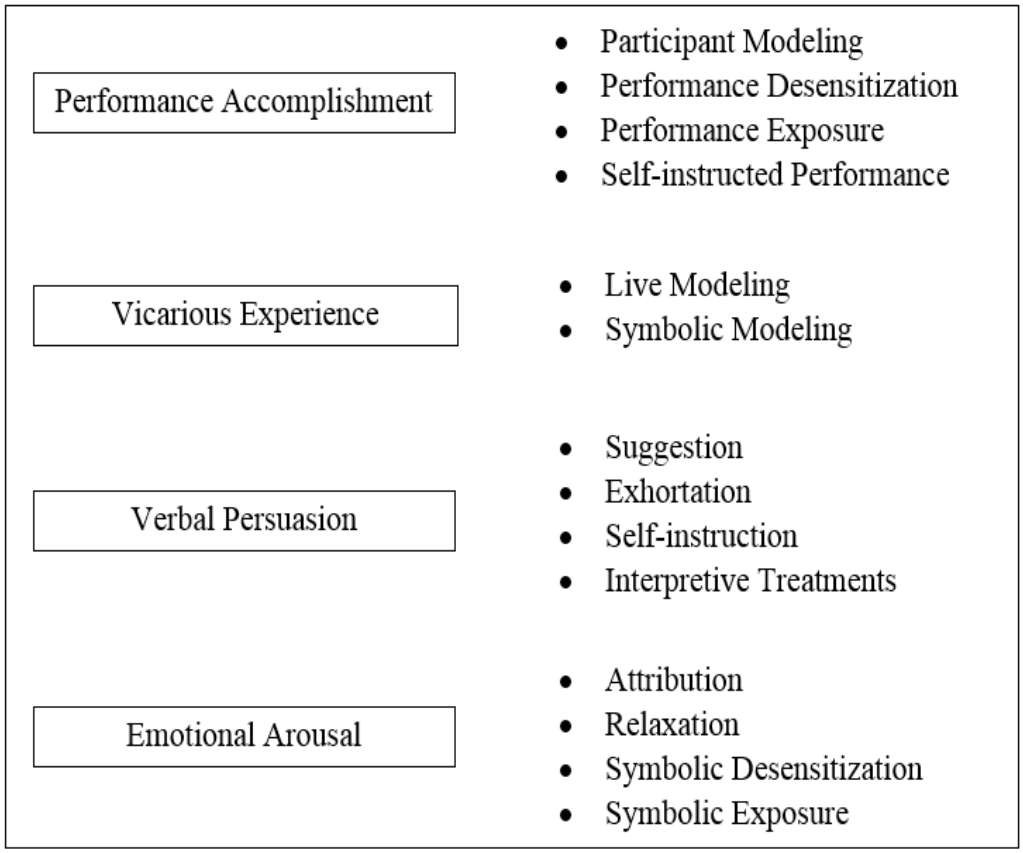

Figure 2.1 Sources of Self-efficacy Information (Bandura, 1977)

Bandura's sources for self-efficacy outline a comprehensive framework which could also be utilized in educational settings. As one can see from the sources listed above in Figure 2.1, self-efficacy belief is not only gaining an ability or skill with the help of mastery experiences; it is also related to emotions and feelings. In other words, individuals' stress, anxieties, moods or concerns also inform their self-efficacy beliefs (Bandura 1997). In that regard, it could be concluded that there is a strong relationship between concerns of individuals and their self-efficacy beliefs. In this direction, Boz and Boz (2010) expressed that concerns and sense of self-efficacies of pre-service teachers are one of the crucial considerations in teacher education programs. Ghaith and Shabaan (1999) emphasized that resolving pre-service teachers' concerns impacts their sense of self-efficacy and subsequently increases the chances of successful implementation. Therefore, it becomes a crucial consideration to investigate the concerns and self-efficacy beliefs of the pre-service teacher to develop more appropriate programs for successful technology integration.

2.6 Educational Change Theories

Successful implementation of technology integration in educational settings highly depends on the teachers. When teachers are asked to integrate an innovation into educational activities, they usually comply with the request, however; the problems begin with the details of implementation (Hall and Hord, 2001). Since the technology integration in education requires change for teachers (Yang and Huang, 2008), some discomforts and concerns can come up related to integrating technologies into instructions in the process of change (McArthur, 2008). Casey and Rakes (2002) posited that people are naturally resistant to change because change is accompanied by uncertainty. Rogers (2003) explained that people are typically rather unwilling to use innovation upon first encounter. In this direction, Fullan, Cuttress and Kilcher (2005) stated that most of the educational reforms fail since the implementers do not adequately understand how to effect change in behavior or mentality. Therefore, understanding the change process of individuals becomes a crucial consideration in order to fulfill the successful technology integration in educational settings.

Change is described as improving new insights and making things in different ways. In other words, change is a process that people and organizations move through while they learn and become more skillful with the use of new technologies and pedagogical practices (Hall and Hord, 2014). Educational change theories offer useful frameworks in order to understand the change process and develop pertinent programs accordingly. In this context, two educational change theories, concern based adoption model and Roger's diffusion of innovation, will be examined since they both explain the change process and are related to each other.

2.6.1 Diffusion of Innovation

The diffusion of innovation theory provides a foundational perspective for adoption theories. This theory is based on the many research findings from different fields such as sociology, education and psychology and it has been used in many fields in order to understand the change process. Rogers (2003) describes diffusion of innovation as a process which explains the adoption of an innovation among people with the help of certain channels. Straub (2009) pointed out that the strength of diffusion of innovation is its ability to explain the factors which are related to decisions or choices of people

regarding an innovation. According to Rogers (2003), there are five attributes of innovation which are influential on the adoption process. He described innovation as an idea, media, method or practice that is perceived as new by people. Furthermore, he defined the five attributes of innovation which could explain its diffusion process. These attributes are (Rogers, 2003):

- Relative Advantage: This attribute is related to the perception of individuals who consider the advantage or disadvantage of using the innovation. If individuals see that a particular innovation has an advantage to use, they will adopt it rapidly.
- Compatibility: This attribute is related to compatibility of innovation to the current knowledge set of individuals. If individuals see that a particular innovation fits into their knowledge, that innovation will be adopted faster.
- Complexity: This attribute is related to the difficulty of using innovation. If individuals find a particular innovation easy to use, they will adopt it.
- Trialability: This attribute is related to the experimentation of innovation. If individuals have opportunities to try a particular innovation, they can adopt it rapidly.
- Observability: This attribute is related to the visibility of innovation among people. If many people use this innovation, an individual will probably adopt it.

These five attributes of innovation could be used to promote the diffusion of innovation among people. By collecting feedback from people about a particular innovation considering these five attributes, the adoption process could be more readily facilitated.

All in all, Rogers's diffusion of innovation theory provides a foundational perspective for explaining the process of adoption. This theory describes how an innovation is disseminated among people. As well as the other disciplines, this theory contributed to education as well. With the help of this theory, the adoption process of teachers who are involved in technology integration could be understood.

In terms of relationship to the concern based adoption model (CBAM), it could be expressed that while diffusion of innovation focuses on the individuals who actively participate in the change process (Rogers, 2003), CBAM differs in terms of focusing on implementation process in which concern profiles are assessed in order to provide support and facilitate the change process of individuals (Hall and Hord, 2014). While CBAM also asserts that individuals could experience more than one stage at a time with different intensity (Hall and Hord, 2014), however; diffusion of innovation theory claims that individuals follow a hierarchical stage (Rogers, 2003). In addition, Straub (2009) discussed that diffusion of innovation is primarily a descriptive theory which explains how an adoption occurs rather than providing prescriptions to facilitate the adoption process. On the contrary, CBAM outlines different sorts of treatments in order to facilitate the change process of individuals. Therefore; in the present study, the process of English language pre-service teachers related to the integration of Web 2.0 tools into ELT classes was examined in the scope of Concern based adoption model (CBAM). The aim was to understand their adoption process and to design and develop more appropriate courses and interventions that are necessary for successful technology integration in education.

2.6.2 Concern Based Adoption Model (CBAM)

Historically, concerns of teachers have been the focus of many research studies. France Fuller became a pioneering researcher in this field after she defined the concerns of pre-service teachers. Fuller carried out several in-depth studies to examine pre-service teachers concerns and proposed the concern phases in regard to educational change. According to Fuller's three concern phases, there were "*pre-teaching phase: non-concern*", "*early teaching phase: concern with self*" and "*late concerns: concern with pupils*" (Hall, George, and Rutherford, 1977, p.12). In the non-concern phase, pre-service teachers indicate low involvement with teaching and their concerns with teaching are usually vague. In the concern with self-phase, pre-service teachers have personal concerns and expect support from their supervisors in order to fulfill their teaching duties. They take into consideration their adequacy to handle classroom management. In the last phase, concerns focus on the learning of students and enhancing professional development. This pioneering research study of Fuller became the basis of CBAM. Researchers in the development center for teacher education at

the University of Texas at Austin investigated individuals who were asked to adopt an innovation for their teaching practices. As a result, CBAM was developed based on the findings of several research studies carried out in this center (George, Hall and Stiegelbauer, 2006). CBAM is a framework which describes, explains the change process and provides diagnostic data for interventions (Hall, George and Rutherford, 1977). This model defines concern as "*the composite representations of feelings, preoccupations, thoughts and consideration given to a particular issue or task*" (Hall and George, 1979, p.8). CBAM has six basic assumptions about the change process (Hord, Rutherford, Huling-Austin and Hall, 1987, p.5). These assumptions are;

- "*Change is a process, not an event*"
- "*Change is accomplished by individuals*"
- "*Change is a highly personal experience*"
- "*Change involves developmental growth*"
- "*Change is best understood in operational terms*"
- "*The focus of facilitation should be on individuals, innovations and the context*".

As a result of six assumptions, Stages of Concern (SoC), levels of use (LoU) and innovation configuration (IC) emerged within the CBAM framework. Hall and Hord (2014) stated that these three components are different from each other since they separately interpret and assess the change process and have different types of conceptualizations and measurement tools.

Stages of Concern (SoC):

Stages of concern are developmental patterns of individuals' feelings and perceptions which evolve in the process of change. It is described as the personal side of change and consists of seven stages. These stages are Unconcerned, Informational, Personal, Management, Consequence, Collaboration, and Refocusing (Hall and Hord, 2014). Descriptions of the concern stages are as follows (George, Hall and Stiegelbauer, 2006):

- Stage 0 – Unconcerned: Individuals indicate little or no concern about using the innovation at this stage. Individuals who experience this stage intensely

express that they are not concerned about the particular innovation in question. They might be more concerned about other things, innovations or activities. Hall and Hord (2014) suggested sharing general information about using the innovation and describing how the innovation is related to the individuals' field in order to arouse interest.

- Stage 1 – Informational: Individuals indicate general awareness about using the innovation. Individuals are not concerned about themselves at this stage and they are interested in learning more about the innovation's general characteristics, as well as requirements and possibilities of usage. Individuals who experience this stage intensely express that they want to know more about the innovation. Hall and Hord (2014) suggested sharing information about the possibility of using innovation and explaining the advantages of using it in order to appeal to the individuals experiencing this concern stage intensely.
- Stage 2 – Personal: Individuals are not certain about the demands of an innovation and their adequacies to fulfill the demands. They are more concerned about their role with the usage of innovation. Furthermore, individuals consider their capabilities, the effects of the innovation on their profession, role, and time and energy commitment in case they use the innovation. Individuals who experience this stage intensely reflect over how using the innovation will affect them. Hall and Hord (2014) suggested encouraging innovation use and clarifying the time and energy required for implementing the innovation in order to appeal to the individuals having this concern stage.
- Stage 3 – Management: Individuals consider time, logistics or other managerial problems. They focus on the issues related to managing, organizing and efficiency. Hall and Hord (2014) suggested practicing how to do activities, demonstrating a model in which the innovation is used effectively and providing hands-on materials in order to appeal to the individuals experiencing this concern stage.
- Stage 4 – Consequence: Individuals focus on the impact of innovation on students at this stage. They consider the outcomes, performances, and competencies of students gained as a result of the implementation of the innovation. Individuals experiencing this stage intensely state that how using

the innovation will affect the students. Hall and Hord (2014) suggested reinforcing ideas and activities and providing development sessions in order to appeal to the individuals having this concern stage.

- Stage 5 – Collaboration: Individuals focus on collaborating with others about the usage of innovation at this stage. Individuals experiencing this stage intensely express that they want to work with others in order to enhance the effects of innovation. Hall and Hord (2014) suggested encouraging and appreciating collaboration efforts in order to appeal to the individuals having this concern stage.
- Stage 6 – Refocusing: Individuals focus on exploring new methods for gaining additional benefits from the innovations. They are concerned about revising the usage of innovation or replacing it with a more powerful alternative. Individuals experiencing this stage intensely state that they have opinions that would work better. Hall and Hord (2014) suggested providing resources to reach other materials, encouraging individuals to evaluate their ideas by staying within vision in order to appeal to the individuals having this concern stage.

These seven stages of concern are also categorized into four levels based on their relationships with each other (George, Hall and Stiegelbauer, 2006, p.4). Unconcerned stage is grouped under the awareness since the individuals having this stage is at the level of awareness. Informational and personal stages are grouped under the self-concerns since these concerns are based on personal thoughts, opinions and attitudes. Similarly, management stage is grouped under the task concerns because the focus of individuals at this stage is about organization and management. Lastly, the consequence, collaboration and refocusing stages are grouped under the impact concerns; because the focus of these concern stages is mainly related to the influence of innovations. In brief, these stages are a short form of the Fuller concern phases. Figure 2.2 is the presentation of seven stages of concern.

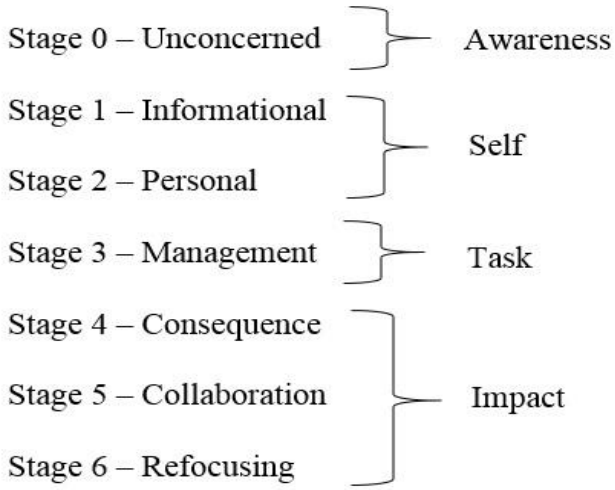

Figure 2.2 Seven Stages of Concerns

Hall and Hord (2014) stated that SoC is termed as stages because there are developmental movements among stages. On the other hand, they stated that stages of concern do not always move in a specific direction due to being a quasi-developmental structure. Depending on the support or facilitation, concerns of individuals might develop, remain alike or return to self-concerns accordingly. In this direction, Hord and et al. (1987) described that concern stages are not mutually exclusive although they are different from each other. They explained that individuals might experience more than one concern stage at a time depending on their involvement with the innovation. Therefore, it is stated that individuals move along concern stages at different intensities, as they gain more knowledge and experience with the innovation (Hall, George and Rutherford, 1977; Hollingshead, 2009).

Having concern means in CBAM "*to be in a mentally aroused state about something*" (Hall and Hord, 2014, p.85). Hall and Hord (2001) expressed that having certain types of concerns could be considered neither good nor bad. The important thing is to analyze the concern profiles of individuals and provide interventions accordingly in order to promote their involvement with the innovations. Hollingshead (2009) emphasized that the seven SoCs are not superior to one another; it can be used as a diagnosis tool to determine the current perspective of individuals on adopting innovations. Chen and Jang (2014) pointed out that SoC could be the critical

framework for addressing needs and wishes of individuals to promote their professional development. Yang and Huang (2008) stated that using the SoC model to reveal the current concerns of individuals can be critical to developing the higher level concerns for the purpose of successful technology integration. In that regard, the SoC model was used as a diagnostic tool in the present study in order to determine the concerns of English language pre-service teachers toward integrating Web 2.0 tools into English language teaching (ELT) classrooms. Hall and Hord (1987) pointed out that the feelings and perceptions of individuals in consideration of technologies determine how the change takes place in a classroom. Therefore, using the SoC model as a diagnostic tool can provide the means to determine attributes that facilitate an increased rate of integration of technologies like Web 2.0 tools for future implementation.

SoC has its own measurement tool, which is the stages of concern questionnaire (SoCQ). George, Hall and Stiegelbauer (2006) stated that SoCQ was developed in order to provide a quick scoring measurement. They explained that SoCQ was tested in terms of reliability and validity with different sample sizes and innovations. As a result, SoCQ has 35 items based on a 7-point Likert scale. In the present study, SoCQ was administered to measure English language pre-service teachers' concern stages.

Level of Use (LoU):

The level of use (LoU) is the second component of CBAM. LoU primarily deals with what teachers do with innovation. In other words, SoC focusses on the affective side of the change process, whereas LoU addresses the behavioral side. LoU does not address the feelings and attitudes of individuals; it only focusses on what individuals do with innovation (Hall and Hord, 2014; Hall, 2013). In LoU component, there are eight behavioral profiles. These behavioral profiles explain the behaviors of individuals from doing nothing, to being a novice and to being an expert. The initial levels of LoU, nonuse, orientation, preparation represent the individuals who are nonusers. On the other hand, the later levels of LoU, mechanical use, routine, refinement, integration, renewal represent the individuals who are users of innovations. The following are the descriptions of the levels of LoU (Hall and Hord, 2014):

- Level 0 – Nonuse: Individuals at this level have little or no knowledge about using the innovation. They do not indicate any involvement with the innovation and make no effort to engage.
- Level 1 – Orientation: Individuals at this level have just gained or are gaining information about using the innovation. Although individuals may attend overview sessions about using innovation or search web sites to obtain more information, they have not decided to use it yet.
- Level 2 – Preparation: Individuals at this level prepare themselves for the first usage of the innovation. They indicate intention to use the innovation but the usage has not started yet. Individuals primarily deal with studying and attending workshops to be prepared for the initial usage.
- Level 3 – Mechanical Use: Individuals at this level primarily deal with short term usage of the innovation. They make efforts to be expert in tasks so that they are able to adopt the innovation, however; they do not focus on the reflection.
- Level 4 – Routine: Individuals at this level stabilize their usage and establish regular methods to engage with innovation. They have routines and do not make an effort to improve the usage of innovation.
- Level 5 – Refinement: The innovation usage of individuals varies at this level. Variations may stem from short term and long-term experiences. Individuals reflect, assess and make adoptions for their usage in order to increase the impact of innovation.
- Level 6 – Integration: Individuals at this level make an effort to collaborate with other individuals in order to accomplish a collective effect on users. Two or more individuals may plan and conduct adoptions in their usage so that they become more influential on their students.
- Level 7 – Renewal: Individuals at this level reconsider the quality of using innovation and seek modifications or alternatives. They try to find developments and new goals in order to increase the effect of using the innovation.

Although it is possible to assess the SoC of individuals in many ways, LoU could only be assessed through long-term observations (Hall and Hord, 2014). In that regard, it

was not utilized in the present study since the English language pre-service teachers only engaged in design activities.

Innovation Configuration (IC):

Innovation Configuration (IC) is the third component of CBAM. Hall (2013) stated that IC emerged as a result of implementing research studies about SoC and LoU. While researchers were carrying out research studies, they found out that there were variations in regard to using the innovations. Considering the modifications about using the innovations, a new component has been added to CBAM. IC identifies the key components of the innovation so that they could be described and made operational in a set of possible variations. Hall and Hord (2014) pointed out that developing IC map is important to build consensus among leaders, change facilitators facilitating the adoption process of individuals in order to prevent confusion about using the innovations. Furthermore, they also expressed that illustrating ideal implementations of innovation could make the change process more efficient. Therefore, an IC map could be used to prevent vagueness.

2.7 Stages of Concern Related Literature

The Stages of Concern (SoC) has been utilized in a variety of different environments in order to diagnose individuals' concerns and facilitate their adoption process. The effects and of several variables, their relationships with the concern stages and strategies to evolve the stages of concerns were investigated in the context of the research studies.

Kayaduman and Delialioglu (2016) investigated the SoC English language pre-service teachers toward integrating wiki into English language teaching classrooms. SoCQ was utilized in order to examine the concern changes of pre-service teachers. SoCQ was implemented as a pre- and post-test at the beginning and end of the treatment which includes learning technology by design activities. Participants were included from 14 English language pre-service teachers. The results of the study indicated that there was a significant increase in the intensity of consequence and collaboration concern stages as a result of implementing 3 weeks learning technology by design

activities. Other concern stages, unconcerned, informational, personal, management, and refocusing remained as it is before the treatment.

Aziz (2008) examined the concern stages of English language teachers in regard to adoption of technological innovations in the classrooms. SoCQ was utilized in order to identify the concern profiles of teachers. Participants were included from 518 English language teachers from 59 schools. The findings of the study revealed that while self-concerns of teachers are at a higher intensity, the later stages were at a lower intensity than the self-concerns. Furthermore, the findings illustrated that concern stages are significantly different depending on the age group and gender of teachers. In addition, there was not significant effect of technology adoption experience of teachers on the concern stages.

Yang and Huang (2008) investigated the concerns of high school English teachers about technology integration in education. The concerns of teachers were determined with the help of SoCQ. Participants' responses were from 332 English teachers from high school. The results of study illustrated that the concerns of English teachers are generally at the informational and personal stages. While the highest intensity concerns of teachers were at informational and personal stage, the lowest intensity stage was awareness. Furthermore, they concluded that English teachers are aware of their responsibilities to integrate technology into their instructions and therefore, they seek more information about integrating technology. Besides, they also explained that teachers are concerned about the effects of technology integration on themselves.

Overbaugh and Lu (2008) conducted a research study with 377 participants in order to investigate the effects of a teacher professional development program toward technology integration into the curriculum by the help of SoCQ. They investigated the differences of concerns level depending on participants' age, gender and school level. They found out that the program was effective in increasing the impact concerns of teachers and reducing their self-concerns toward technology integration into the curriculum. Moreover, the findings of the study illustrated that younger teachers were more concerned about gaining additional information about technology integration, effects of technology integration on themselves, and managerial issues of integrating technology into the curriculum. On the other hand, the older teachers were more

concerned about gaining more information, effects of technology integration on themselves and their students, organizational and managerial issues, and refinement of technology integration. They were not very concerned about collaboration with others to integrate technology. Besides, the study also revealed that school level was not influential on the concern stages.

Donovan and Green (2010) investigated the concerns of faculty members in regard to implementation of one-to-one laptop teacher education program with the help of SoCQ. Participants of the study included 8 instructional and 3 field supervision faculty members. The results of the study revealed that the highest concerns of faculty members as a group are at the stage of awareness, informational and personal. Furthermore, field supervision faculty members had more intense self-concerns than instructional faculty members did. As a result, they suggested that determining faculty readiness with the help of SoCQ, preparing them before the implementation, and considering individual differences are essential to the successful implementation of technology integrated teacher education.

Lau and Shiu (2008) conducted a research study with 377 teachers participating in a training workshop which is related to adopting pair work for assessment in the classroom. The teachers in the study had a minimum of 3 years teaching experience. The SoCQ was administered to teachers in order to investigate their concern stages. The results of study illustrated that the highest concern stages of teachers are awareness, informational, personal and management. Moreover, the findings indicated that teachers who are younger or have less than 10 years teaching experience were more ready to adopt an innovation.

Wells and Anderson (1997) examined the effects of instruction on students' attitudes toward integration of the internet into their work. Participants included 15 students who registered in a graduate-level telecommunication course. SoCQ was utilized to measure the attitudes of students toward integration of the internet. SoCQ was administered three times as pre-, mid- and post-treatments in the context of course. The results of study illustrated that while there was a positive significant trend between pre- and mid-treatment regarding awareness, management, and consequence concern stages, there was not significant change from between pre- and mid-treatment

regarding other concern stages. In other words, the concerns of awareness, management and consequence increased from pre- to mid-treatment. Besides, there was a negative significant trend between mid- and post-treatment regarding awareness and management concern stages, which means the concerns of awareness and management decreased from mid- to post-treatment. On the other hand, there was a positive trend between pre- and post-treatment in regard to consequence concern stages.

Toms (1997) carried out a correlational research study in order to examine the concern stages of faculty members toward utilizing the internet for instructional purposes. The sample of the study included 540 responses of faculty members. The findings of the study revealed that the level of internet use for instructional purposes and using the internet for all other purposes were significantly related to the most intense concern stages. Besides, the findings of the study also illustrated that the concern stages of faculty members who modified their teaching depending on their students were significantly related to their most intense concern stages. In addition, she found out that the gender variable could predict the peak stages of concern.

Joffrion (2014) investigated the concerns of school teachers in regard to integrating video conferencing into their classrooms. The SoCQ was administered online in order to assess the adoption level of video conferencing in the classrooms. Participants were included from 32 high school teachers. The findings of the study indicated that most of the teachers are more concerned about the impact of video conferencing on their students. In addition, the results also revealed that there was a significant relationship between the peak concern stages and teaching experience.

Casey and Rakes (2002) conducted a research study to examine teachers' concerns about instructional technology. They identified the concerns of teachers with the help of SoCQ. The sample of the study included 659 responses from PK-12 teachers. The results of the study indicated that three most intense concerns of teachers -- management, consequence and collaboration -- had a significant correlation with technology integration training. They also discovered that engaging with technology for a long time helps teachers use it more effectively and comfortably.

Liu, Theodore and Lavelle (2004) examined the effects of online instruction on the concerns of K-12 teachers toward technology integration for instruction. Participants were included from 23 in-service teachers. SoCQ was implemented in order to investigate concern changes of teachers and it was administered as a pre- and post-test. As a result, the findings of the study revealed that there was a significant increase in all concern stages.

Liu and Huang (2005) carried out a research study to examine the concerns of teachers toward technology integration. Participants were included from 86 in-service teachers who enrolled in a graduate course. SoCQ was administered to examine the stages of concerns. The results of study revealed that teachers' highest intensity concerns were at the stage of informational, personal and refocusing. Furthermore, the results also explained that teachers who have different perceptions of their implementation status indicate different concern profiles.

Alshammari (2000) explored the concerns of teachers who implement information technology curriculum in their instructions. SoCQ was used in order to examine the concerns of teachers. Participants of the study included 248 teachers from Kuwait. The results of the study indicated that while the highest intensity concerns of teachers were at the stages of informational, personal, collaboration and refocusing, their lowest intensity concerns were at the management and awareness stages. Moreover, the group profile of teachers illustrated that having more experience with technology resulted in developing higher impact concerns. Besides, it was also found out that female and male teachers differed in highest intensity concerns. While male teachers were more concerned about revising the usage of technologies or replacing it with a more powerful alternative, female teachers were concerned about the issues related to managing, organizing and efficiency of technologies.

To sum up, it could be concluded that the SoC has been used in many settings in order to determine the current perspectives of individuals, reveal their concerns and address their needs and wishes. The research studies stated above illustrated that concern stages of individuals are highly personal and mostly depend on the experiences of individuals, type of innovation and support, major field, age group and gender.

Understanding the concerns of individuals helps to better facilitate the adoption process of teachers.

2.8 Chapter Summary and Research Gaps

The literature review in this chapter indicated that Web 2.0 tools provide new ways to promote teaching and learning processes (Dippold, 2009; Kessler, 2009; O'Reilly, 2005; Richardson, 2006; Selwyn, 2008) and teachers need to involve in change process in order to comply with technology integration in education considering the technology integration as a change process (Yang and Huang, 2008). In this direction, research studies indicate that pre-service teachers are not getting well-prepared to involve in change process which comes along with technology integration (Lee & Lee, 2014; Kalota & Hung, 2013; Han, Eom, & Shin, 2013; Goktas, Yildirim, & Yildirim, 2009; Lei, 2009).

Regarding the change process, some concerns may arise in terms of practitioners while using technological tools for their instructions because change brings unknown (Casey and Rakes, 2002). Technological tools may be promising innovations and provide several advantages, but concerns of practitioners may prevent successful implementation. Although various research is available related to the courses and interventions (Koehler and Mishra, 2005; Alayyar, 2011; Johnson, 2012), very little is known about the specific concerns of pre-service teachers when implementing technology integration activities. Because concerns influence the sense of self-efficacy and eventually the performance (Hall, 1976; Hall and Hord, 1987; Ghaith and Shabaan, 1999; Wexler, 2003; Boz and Boz, 2010), investigating the pre-service teachers' concerns and sense of self-efficacies might be valuable in gaining comprehension of their concern stages. Furthermore, obtaining information regarding the concerns of pre-service teachers can uncover any hidden issues that might obstruct future technology integration decisions and implementations.

CHAPTER 3

METHODOLOGY

3.1 Research Design of the Study

A mixed methods research design was carried out to answer the research questions of the present study. Mixed methods research allows researchers to collect, analyze and mix both qualitative and quantitative data in a single study or series of studies. The main premise of mixed method research is that the combination of qualitative and quantitative data provides a better comprehension of research problems for the study. An embedded design was used as a sort of mixed methods design in the present study. In an embedded mixed methods design, one form of data provides a supportive role for another form of data (Creswell and Clark, 2007).

An embedded mixed methods design was the most appropriate research design for the present study. The purpose of the study is to examine the influence of LBD activities carried out in the context of Instructional Principles and Methods course on pre-service teachers' stages of concern and self-efficacy beliefs for technology integration in English Language Teaching. To this end, while quantitative data were collected from stages of concern questionnaire (George, Hall and Stiegelbauer, 2006) and technology integration self-efficacy belief survey (Wang, Ertmer and Newby, 2004), qualitative data were collected from focus group and individual interviews. The reason for collecting qualitative data is to provide support for the quantitative results. The following research questions guided the present study:

1. Is there a significant difference in pre-service teachers' Stages of Concern Questionnaire scores for technology integration in English Language Teaching after attending Learning Technology by Design activities implemented in the Instructional Principles and Methods course?
2. How do Learning Technology by Design activities implemented in the Instructional Principles and Methods course influence the pre-service teachers' stages of concern for technology integration in English Language Teaching?
3. Is there a significant difference in pre-service teachers' Technology Integration Self-Efficacy Beliefs Survey scores after attending Learning Technology by Design activities implemented in the Instructional Principles and Methods course?
4. How do Learning Technology by Design activities implemented in the Instructional Principles and Methods course influence the pre-service teachers' technology integration self-efficacy beliefs?

While the first two research questions investigated the change that occurred throughout the intervention on SoC, the last two research questions investigated the technology integration self-efficacy beliefs over the course of implementing LBD activities.

Creswell and Clark (2007) pointed out that considering the question "*would the results of the secondary data type be meaningful if they were not embedded within the other data set?*" could be helpful in differentiating embedded design from other types of mixed methods designs (p. 69). In the present study, individual interviews and focus groups would not merely inform the concern and self-efficacy changes in accordance with the overall purpose of the study. Therefore, embedded mixed method design was used to answer the research questions of the study.

Although there are various types of embedded designs in the literature, Creswell and Clark (2007) discussed only two models, which are the embedded experimental and correlational model. In the present study, embedded experimental was carried out as a model of embedded mixed methods design. Creswell and Clark stated that the main reason for conducting this model was to embed qualitative data within a true or quasi-experiment study.

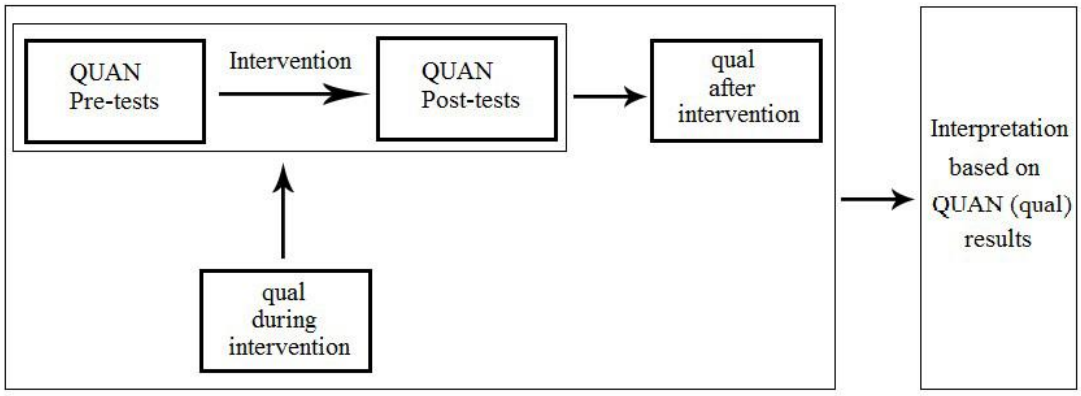

Figure 3.1 Embedded Experimental Model

Figure 3.1 is the embedded experimental model implemented in the present study. Initially, pre-tests of the SoCQ and technology integration self-efficacy survey were applied before the interventions to measure English language pre-service teachers' initial concern stages and technology integration self-efficacy beliefs. Afterward, focus group interviews were conducted periodically during the interventions to understand the influence of LBD activities on pre-service teachers' SoC. Accordingly, post-tests of SoCQ and technology integration self-efficacy survey were carried out after the interventions were complete to measure the final concern stages and technology integration self-efficacy beliefs of English language pre-service teachers. Lastly, the individual interviews were conducted to reveal the present SoC and and technology integration self-efficacy survey of pre-service teachers for integrating Web 2.0 tools into ELT classrooms at the end of semester.

3.2 Participants of the Study

Participants included 24 (22 females and 2 males) English language pre-service teachers registered for the course "Instructional Principles and Methods" in the department of Foreign Language Education at Middle East Technical University during the 2014-2015 Spring semester. All pre-service teachers were in second year and advanced level English speakers.

In the present study, the purposeful sampling method was used to answer the research questions. Babbie (2001) stated that purposive sampling can be employed depending upon the knowledge and characteristics of the group and purposes of the research. The

present study targeted the specific population of English language pre-service teachers by using purposive sampling. The reason for choosing the participants in this study is because the “Instructional Principles and Methods” course, which appeals to second-grade pre-service teachers, is the first course English language pre-service teachers take to learn instructional methods, strategies, and planning. While they learn how to design effective instruction, they could concurrently discover how to integrate Web 2.0 tools technologies into their pedagogies. In that regard, it is crucial considerations to investigate the concern stages and technology integration self-efficacy beliefs of English language pre-service teachers in this process.

3.3 Procedure

The present study was based on “Instructional Principles and Methods” course. The course takes fourteen weeks and has three class hours per week. Initially, the professor of the course and the researcher shaped the course activities in the context of the Learning Technology by Design (LBD) framework and aligned with the course goals and objectives. The course content was not changed. Among several Web 2.0 tools, only Zimmertwinsatschool, Bubbl.us, Quizlet, Blogger, Socrative, and Facebook were integrated into the course curriculum. Additionally, Wikibook and Google Doc Web 2.0 tools were also utilized in the context of the course. Wikibook was used to support collaborative writing for pre-service teachers’ comprehensive lesson plans, and Google Doc was used to give peer feedback on comprehensive lesson plans. In addition to the most used Web 2.0 tools in English Language Teaching (ELT) literature, the criteria for choosing Web 2.0 tools was their usefulness, effectiveness, efficiencies, and ease of use. Despite the efforst of collecting data from other sections of “Instructional Principles and Methods” course to compare the findings, it could not be collected due to the failure to provide standart conditions. *Table **3.1*** illustrates the entire procedure of the present study.

Table 3.1 Procedure of the Study

Date	***Learning Technology by Design Activities***		***Data Collection***
Week1	Introduction to the Course		
Week2	Lecture and Discussion about Concept Mapping		**Pre-tests** of SoCQ and Self-efficacy Scale
Week3	Lecture and Discussion about Learning and Teaching	**Technology Integration** **Presentation**: • Describing the definition of technology and its two sub-description (Transparent and emerging technologies) • Explaining the four main advantages of using technology (Effectiveness, Efficiency, Cost, and Pace). • Describing Web 2.0 tools and their main features, • Summarizing the research articles about how technologies have facilitated learning and teaching process in education. **Discussion:** • Why do we need to use technologies in education? • How can technologies can facilitate teaching and learning process? **Demonstration**: • Using Google forms to demonstrate how technologies can increase effectiveness and efficiency and reduce costs (Example of collecting and analyzing data)	

Table 3.1 Procedure of the Study (Cont'd)

Date	***Learning Technology by Design Activities***		***Data Collection***
Week4	Lecture and Discussion about Instructional Design Frameworks	**Presentation:** • Explaining the change process in education which come with technologies • Explaining the design frameworks in Education • Explaining Pedagogical Content Knowledge • Explaining Technological Pedagogical Content Knowledge **Discussion:** • Discussing how technology related courses are being carried out in Faculty of Education • Discussing how teacher educators should be educated to integrate technology • Discussing how Technological Pedagogical Content Knowledge can help to integrate technologies into instruction **Establishing groups for comprehensive lesson plan designs**	
Week5	Lecture and Discussion about Instructional Goals and Objectives	**Demonstration** of Zimmertwinsatschool **Design Activity:** • Exploration of Zimmertwinsatschool • Writing objectives to be attained by the help of Zimmertwinsatschool • Design a lesson activity in which Zimmertwinsatschool will contribute to attain goals and objectives of lesson in ELT **Assignment File-1** (See Appendix-H)	

Table 3.1 Procedure of the Study (Cont'd)

Date	***Learning Technology by Design Activities***		***Data Collection***
Week6	Lecture and Discussion about Selecting and Implementing Strategies of Instruction	**Demonstration** of Bubbl.us • Using bubble.us to facilitate one of the selected instructional strategies **Design Activity:** • Exploration of Bubbl.us • Design an activity in which selected instructional strategy is facilitated by Bubble.us **Assignment File-2** (See Appendix-I) **Instructional objectives assignment**	
Week7	Lecture and Discussion about Thematic Planning	**Peer Feedback** on Instructional Objectives assignments **Group works** on comprehensive lesson plans	**Focus Groups** 9 subjects
Week8	Midterm Exam		
Week9	Lecture and Discussion about Assessment	**Demonstration** of Quizlet and Blogger • Using Quizlet for summative assessment • Using Blogger for performance assessment **Design Activities:** • Exploration of Quizlet and Blogger • Design assessment activities for the instruction in which Quizlet and Blogger are used in ELT **Assignment Files 3 and 4** (See Appendix- J and K)	

Table 3.1 Procedure of the Study (Cont'd)

Date	***Learning Technology by Design Activities***		***Data Collection***
Week10	Lecture and Discussion about Constructivist Accounts of Learning	• Introduction to Wikibook and collaborative writing • **Group works** on comprehensive lesson plans	
Week11	Lecture and Discussion about Direct Teaching Methods	**Demonstration** of Socrative • Using Socrative to support direct instruction teaching methods **Design Activity:** • Exploration of Socrative • Design a direct teaching activity in which Socrative is used to support instruction in ELT **Assignment File 5** (See Appendix-L)	**Focus Groups** 6 subjects
Week12	Lecture and Discussion about Indirect Teaching Methods 1	**Design Activity:** • Using Facebook to support discussion. • Exploration of Facebook • Designing a discussion activity in ELT supported by Facebook **Assignment File 6** (See Appendix-M) **Group works** on comprehensive lesson plans • Guidance for comprehensive lesson plan designs • **Turning in the first version of comprehensive lesson plans**	

Table 3.1 Procedure of the Study (Cont'd)

Date	***Learning Technology by Design Activities***		***Data Collection***
Week13	Lecture and Discussion about Indirect Teaching Methods 2	**Peer Feedback** on the first version of comprehensive lesson plans: • Google Doc was used to give peer feedback • Each group gave feedback to other groups' lesson plans **• Turning in the last version of comprehensive lesson plans**	**Focus Groups** 7 subjects 6 subjects 4 subjects
Week14	Closure		**Post-tests** of SoCQ and Self-efficacy Scale **Individual Interviews** 12 subjects

In the first week, course content, its objectives, and activities were introduced to second grade English language pre-service teachers. All pre-service teachers enrolled were asked to participate in the study. Although there were 30 pre-service teachers at first, 24 pre-service teachers continued to take the course. In the second week, 24 pre-service teachers took the pre-tests of the stages of concern questionnaire (SoCQ) and technology integration self-efficacy belief survey. After that, lecture and discussion sessions were carried out about concept mapping which covered knowledge, concepts, cognition, metacognition, and linguistics.

In the third week, lecture and discussion about the concepts of learning and teaching, and theories of learning and instruction were conducted in the first session. In the second session, presentation and discussion were carried out about technology integration covering the descriptions of technology, benefits of using technology, and

summarizations of research articles explaining how technologies can facilitate teaching and learning processes. Following that, a demonstration was made to show how technology could facilitate a process which generally takes longer time. The benefits of technology were demonstrated to pre-service teachers by using Google Doc to collect and analyze data obtained from students.

In the fourth week, in the first session, lecture and discussion were carried out about the instructional design frameworks. In this regard, instructional design, its relation to learning and instructional theories, and instructional design frameworks were covered. Following that, presentation and subsequent discussion session were conducted in the second session. The change process in education coming with technologies, the design frameworks in education, Pedagogical Content Knowledge framework, Technological Pedagogical Content Knowledge framework, one of the most used frameworks for technology integration in education, and their relations to teacher education and English Language Teaching (ELT) were discussed in the classroom. In addition, pre-service teachers were supposed to establish their design groups so that they could work on comprehensive lesson plan design.

In the fifth week, lecture and discussion were carried out about instructional goals and objectives in the first session. Three major domains of learning, how goals and objectives are identified and their relationships to the curriculum were covered in this scope. After that, in the second session, pre-service teachers engaged in their first design activities. Assignment file - 1 (See Appendix- H) was provided to pre-service teachers to guide them in this process. In order to engage pre-service teachers in this design activity, Zimmertwinsatschool, one of Web 2.0 tools was introduced to them. This Web 2.0 tool is a cartoon movie development tool in which people can develop scenarios and make small movies about a context. In this design activity, pre-service teachers were supposed to explore the features, limitations and pedagogical affordances of this tool and then write instructional goals and objectives to be attained with the help of this tool. Accordingly, they were supposed to design a lesson activity in which Zimmertwinsatschool helped to attain their goals and objectives and subsequently write a reflection on the activity that they completed.

In the sixth week, lecture and discussion about selecting and implementing strategies of instruction were carried out in the first session. Deciding on instructional strategies, styles of teaching and learning, and organization of instruction was covered in this scope. Afterward, in the second session, pre-service teachers engaged in their second design activities. Assignment file - 2 (See Appendix-I) was provided to pre-service teachers to assign them with their design activity. In this activity, Bubbl.us was introduced to the pre-service teachers. Bubbl.us is a tool that helps to develop concept maps. In this second design activity, pre-service teachers were asked to explore the features, limitations and pedagogical affordances of Bubbl.us and then select an instructional strategy using the Web 2.0 tool. Accordingly, they were expected to design a lesson activity in which the selected instructional strategy was facilitated by the help of Bubbl.us and write a reflection on the activity. Apart from this activity, pre-service teachers were also required to prepare instructional goals and objectives which allowed them to form their future comprehensive lesson plans.

In the seventh week, lecture and discussion about thematic planning and reasons for using it, its relation to technology integration, challenges, and differences from other approaches were explained to pre-service teachers. Following that, pre-service teachers gave peer feedback to other groups' instructional goals and objectives assignment and then worked on their comprehensive lesson plans as a group. During the week, the first focus group interviews were conducted with nine pre-service teachers. Convenient sampling method was used to choose the participants. The reason for conducting focus group interview with nine pre-service teachers was to examine the activities conducted by then (See Appendix-O) regarding pre-service teachers' perspectives. It was aimed to reveal different opinions about the activities by involving nine pre-service teachers in the focus group.

In the eighth week, no session was held, and pre-service teachers took their midterm exam. Apart from this, pre-service teachers were asked to gather and work on their comprehensive lesson plans as a group during the week.

In the ninth week, lecture and discussion about assessment in education were carried out in the first session. Formative and summative assessment, selecting and implementing appropriate assessment techniques in line with the goals and objectives

were covered in this scope. Afterward, pre-service teachers engaged in new design activities. Assignment File – 3 (See Appendix-J) and 4 (See Appendix-K) were supplied to pre-service teachers. They were expected to explore two Web 2.0 tools, Quizlet, and Blogger in order to use them for two different assessment techniques. Quizlet was integrated to foster summative assessment and Blogger was integrated to support the formative assessment process. Hence, pre-service teachers were supposed to explore the features, limitations and pedagogical affordances of Quizlet and Blogger and then design two separate lesson activities and write reflections on two different design activities accordingly.

In the tenth week, lecture and discussion about constructivist accounts of learning were conducted in the first session. Constructivism, its implications for teaching and learning, benefits of technologies on constructivism were covered in this scope. To illustrate the constructivist learning process, Wikibook, one of the Web 2.0 tools, was demonstrated to pre-service teachers and they explored its features and pedagogical affordances. Pre-service teachers were required to use this tool to prepare their comprehensive lesson plans in order to facilitate the process of collaborative writing. After that, pre-service teachers continued to work on their comprehensive lesson plans as a group and their questions and problems were guided.

In the eleventh week, lecture and discussion about direct teaching were first carried out. Direct teaching methods, its advantageous and disadvantageous were covered in this scope. After that, pre-service teachers engaged in their fifth design activity, with Assignment file -5 (See Appendix-L) provided to the pre-service teachers as a guide. Socrative, one of the Web 2.0 tools, was introduced to pre-service teachers. Socrative is a web-based tool which facilitates real-time questioning and result aggregation. In this design activity, pre-service teachers explored the features, limitations and pedagogical affordances of this tool and then prepare a lesson activity in which Socrative was used to foster one of the direct instruction methods which were selected by themselves. Accordingly, they wrote reflections about the design activity. During the week, second focus group interviews were conducted with six pre-service teachers. The convenient sampling method was used to choose the participants. Pre-service teachers were randomly asked to attend focus group interviews. The purpose of this

focus group interview was to examine the second, third, fourth and fifth design activities regarding pre-service teachers' perspectives (See Appendix-P).

In the twelfth week, lecture and discussion about indirect teaching were conducted. Indirect teaching methods, examples of indirect teaching methods, its advantages and disadvantages and comparison to direct teaching methods were covered in this context. Following that, pre-service teachers engaged in their sixth and last design activity. Assignment file – 6 (See Appendix-M) was provided to pre-service teachers. Facebook was introduced to pre-service teachers not simply as a form of social media but as a pedagogical web 2.0 tool. It is one of the most used social networks in education and can be used to facilitate discussion sessions in education. In this design activity, pre-service teachers are supposed to explore the features, limitations, and pedagogical affordances and then prepare a discussion activity in which Facebook was used as a medium to facilitate a discussion. Accordingly, they wrote reflections about this design activity. During the week, pre-service teachers were guided to form their comprehensive lesson plans and required to submit the first version of it.

In the thirteenth week, lecture and discussions continued about indirect teaching methods. After that, pre-service teachers gave peer feedback on their first version of comprehensive lesson plans. Google Doc was used to support the peer feedback session. The reason for using Google Doc was to facilitate a collaborative writing process and organize the received feedback for lesson plans. After they received and gave peer feedback on each lesson plan, they were supposed to revise and submit the last version of their comprehensive lesson plans. In the week, the last focus group interviews were conducted with three separate groups. The first, second, and final group included 7, 6, and 4 pre-service teachers, respectively. The pre-service teachers in the design groups were gathered in the same focus group interviews. The purpose of this focus group interview was to examine the comprehensive lesson plan design process regarding pre-service teachers' perspectives (See Appendix-Q).

In the fourteenth and final week, the course was brought to a close by summarizing what they have done over the semester. Following that, 23 pre-service teachers took the post-tests of stages of concern questionnaire (SoCQ) and technology integration self-efficacy belief survey. Only one pre-service teacher could not take the post-tests.

Although this pre-service teacher was contacted later, she did not take the post-tests. Because she attended all course activities, her data was not eliminated from the study.

After the interventions completed, individual interviews (See Appendix-R) were conducted. 12 pre-service teachers were interviewed about their concern stages and technology integration self-efficacy beliefs. The convenient sampling method was used for selecting participants. Pre-service teachers were asked whether they wanted to attend individual interviews or not and those who responded positively were interviewed. The purpose of conducting individual interviews was to reveal the present SoC and technology integration self-efficacy beliefs of English language pre-service teachers for integrating Web 2.0 tools into ELT classrooms in order to explain the quantitative results.

3.4 Data Collection Instruments

3.4.1 Stages of Concern Questionnaire

Stages of Concern Questionnaire (SoCQ) (George, Hall, and Stiegelbauer, 2006) was used to measure the concern stages of English language pre-service teachers in regard to integrating Web 2.0 tools into English language teaching (See Appendix-C). The questionnaire is 8-point Likert scale and has 35 items. Participants are required to select how much they agree on the statement upon Likert scale from 0 to 7. While the highest score '7' indicates that participants think of an item to be "very true of me", the lowest score '0' indicates "irrelevant to me". The word "innovation" was replaced with "Web 2.0 tools" in the instrument when appropriate with the questionnaire instruction. George, Hall and Stiegelbauer (2006) suggested that the word "innovation" could be replaced with other innovations or initiatives in the instrument. Other changes can risk the validity and reliability of the questionnaire.

The coefficient values of SoCQ for internal reliability range from 0.64 for Stage 0 to 0.83 for Stage 2, with six of the seven coefficients being above 0.70 (See Table 3.2). The values of test-retest correlation of SoCQ range from 0.65 to 0.86, with six of the seven correlations being above 0.70 (See Table 3.3). These values indicate that SoCQ is a valid and reliable instrument to measure the concern stages.

Table 3.2 Coefficients of Internal Reliability for SoCQ

Stage	0	1	2	3	4	5	6
Alpha	.64	.78	.83	.75	.76	.82	.71

(George, Hall and Stiegelbauer, 2006, p. 20)

Table 3.3 Test-Retest Correlations for SoCQ

Stage	0	1	2	3	4	5	6
Alpha	.65	.86	.82	.81	.76	.84	.71

(George, Hall, and Stiegelbauer, 2006, p. 20)

Although the internal reliability of Stage 0 does not match the minimum criteria of being above 0.70 (Büyüköztürk, 2009), questions from this stage have not been extracted from the original questionnaire of SoCQ. George, Hall and Stiegelbauer (2006) explained this situation that items which indicate a lack of knowledge about innovation and lack of interest in learning it grouped overtly at this stage according to the factor analysis results. Therefore, two concepts, lack of knowledge and interest, were represented in the questionnaire by including this stage's questions.

3.4.2 Technology Integration Self-Efficacy Belief Survey

The technology integration self-efficacy belief survey (Wang, Ertmer, and Newby, 2004) was used to measure the self-efficacy beliefs of English language pre-service teachers in regard to integrating Web 2.0 tools into English language teaching (See Appendix-F). The instrument is a 5-point Likert scale survey and has 21 items. Participants require rating the items based on their level of confidence with the statement ranging from "Strongly Disagree" to "Strongly Agree". Apart from the word "computer", which was replaced with "Web 2.0 tools", no other changes were done in the instrument.

Wang, Ertmer, and Newby (2004) stated that they reviewed the survey in terms of content and construct validity. They pointed out that a group of experts in the area of

self-efficacy worked to examine the content of the survey. The experts individually reviewed and made suggestions on each item. Accordingly, the researchers made necessary revisions based on the feedback. After this process was completed, the researchers administered pre- and post- surveys and collected data. Based on the factor analysis results, they formed the construct validity of the instrument. In addition, they calculated alpha coefficients of the survey to determine the reliability of the survey and found out that alpha coefficient was 0.94 for pre-survey and 0.96 for post-survey, which indicates that the survey is reliable. Therefore, it could be said that this survey is valid and reliable to measure the technology integration self-efficacy beliefs of English language pre-service teachers.

3.4.3 Focus Group Interviews

Focus group interviews may be conducted if the study is not personal and sensitive and if the researcher wants to collect different sort of perspectives from participants (Yıldırım and Şimşek, 2013). In line with the aim of the present study, focus group interviews were periodically conducted to understand the influence of LBD activities on pre-service teachers' SoC. Convenient sampling method was used to choose the participants. Initially, a semi-structured focus group interview protocol was designed depending on the activities carried out during the semester. Lastly, the opinions of two experts were taken to finalize the focus group interview protocols. (See Appendix O, P, Q).

3.4.4 Individual Interviews

An interview provides opportunities to understand someone's thoughts, feelings, interpretations, perceptions and intentions which are not possible to discover by simply observing them (Patton, 2001). Yıldırım and Şimşek (2013) pointed out that it is more acceptable to carry out the individual interview if the topic is personal and sensitive. Considering this situation, individual interviews were preferred because the issues related to concerns and self-efficacy beliefs might be more personal in terms of pre-service teachers. The aim of conducting individual interviews is to gather information from pre-service teachers about their concern stages and self-efficacy beliefs to explain the quantitative results for integrating Web 2.0 tools into ELT classrooms. Similar to focus group interviews, a semi-structured interview protocol was firstly designed and

then it was finalized after opinions from two experts were taken into consideration (See Appendix-R).

3.5 Data Analysis

3.5.1 Quantitative Data Analysis

In the present study, the stages of concern questionnaire and technology integration self-efficacy belief survey were implemented as pre- and post-tests. Before starting to analyze data gathered from pre- and post-tests, missing values were determined. Although there was no missing data for the pre-tests, there was missing data from the post-tests. Only one of the pre-service teachers did not take the post-tests, though she took the pre-tests. Hence, it was considered as missing data for the post-test scores. Pallant (2007) discussed how to deal with missing data. The "Replace with mean" option was used to handle missing data for the post-test scores. Pallant stated that the mean value of each variable is given to each missing case and it can be used if there are not too many missing cases in this method (p.57). Since the sample size is not large enough and there is only one missing case, this method was appropriate to handle the missing data.

All statistical analysis was carried out with IBM SPSS Statistics 20 program. Paired sample t-test was conducted to compare the mean scores of pre- and post-tests. Pallant (2007) pointed out that a paired sample t-test is used when the scores of matched pairs are compared on different occasions. Field (2009) stated that a dependent t-test has two assumptions. The first is that the distribution of sampling should be normally distributed and the second is the data should be measured at the interval level (p.326). Because the scales, stages of concern questionnaire and technology integration self-efficacy belief survey, were at the interval level, the second assumption was already met. In regard to the first assumption, Field pointed out that it is needed to compute the differences between scores so that this can be used to test the normality of the distribution (p.329). After this operation is completed, the normality of the distribution was tested. Results of Kolmogorov-Smirnov and Shapiro-Wilk tests indicated that the distribution was normally distributed. Pallant (2007) stated that Kolmogorov-Smirnov statistic could be used to test the normality of distribution. Non-significant results

indicate that the scores are normally distributed (p.62). Since the assumptions were met, conducting paired sample t-test was appropriate in the present study.

Accordingly, the pre-test and post-test scores of English language pre-service teachers were compared to each other to see whether there was a change in their stages of concern for integrating Web 2.0 tools into English language teaching. Similarly, same statistical analysis procedure was applied to see whether there was a change in English language pre-service teachers' technology integration self-efficacy beliefs for integrating Web 2.0 tools into English language teaching.

3.5.2 Qualitative Data Analysis

In the present study, focus group interviews were carried out periodically to examine the LBD activities in terms of perspectives of pre-service teachers. Theses interviews were conducted at different time intervals. On the other hand, individual interviews were carried out to collect qualitative data from pre-service teachers about their concern stages and self-efficacy beliefs to explain the quantitative results in regard to integrating Web 2.0 tools into English language teaching. Focus group and individual interviews were recorded, transcribed verbatim and prepared for analysis.

In the literature, one can find many different methods to analyze qualitative data. Strauss (1987) stated that standardizing the methods of qualitative data analysis confines the researchers to interpret the data in an in-depth way (as cited in Yıldırım and Şimşek, 2013, p.253). Accordingly, Yıldırım and Şimşek (2013) discussed only two qualitative analysis methods, descriptive and content analysis, to simplify the process of data analysis, though there were other methods stated in the literature.

In the present study, both descriptive and content analysis methods were utilized to analyze the qualitative data. Yıldırım and Şimşek (2013) pointed out that descriptive analysis can be used in research studies in which the conceptual framework of the study is explicit. The following steps stated by Yıldırım and Şimşek (2013) was used as a guide to carry out descriptive analysis:

- Creating a framework
- Processing the data based on framework
- Describing the findings
- Interpreting the findings

Yıldırım and Şimşek (2013) also stated that content analysis requires one to analyze the data in an in-depth manner and allows researchers to find out new themes and dimensions. The following steps were utilized to conduct content analysis in the present study (Yıldırım and Şimşek, 2013):

- Data coding
- Developing themes
- Organizing codes and themes
- Interpreting findings

In the present study, qualitative data analysis started with the procedures of descriptive analysis (Yıldırım & Şimşek, 2013). Since the theoretical framework of the study was SoC, the preliminary themes were defined based on the seven concern stages by reviewing the related literature. Subsequently, the procedures of content analysis (Yıldırım & Şimşek, 2013) were followed to reveal any unforeseen concepts and themes in the data. Each qualitative finding embedded in the associated quantitative findings to gain a better understanding of the overall purpose of the present study.

3.6 Researcher Role

Explaining the role of the researcher can provide insights for other researchers who want to implement similar studies and it increases the reliability of the studies to be able to reach similar findings (Yıldırım and Şimşek, 2013). In the present study, the role of the researcher can be described under two parts. First, the researcher worked with the professor of the course to form the course content and design activities before implementation. The course, “Instructional Principles and Methods”, took fourteen weeks and had three class hours per week, two hours for theoretical background and one hour for the design activities. The researcher was the teaching assistant of the course and led the design activities and monitored the pre-service teachers during the implementation. In addition, he attended all theory classes. Secondly, the researcher

collected data during the semester. He administered all pre- and post-tests, focus group, and individual interviews.

3.7 Validity of the study

Since the present study is a mixed method study, it includes both quantitative and qualitative data. Creswell and Clark (2007) pointed out that validity varies in quantitative and qualitative research, the purpose of validity is to check the quality of data and the results. Hence, the validity issue was given under two parts as quantitative and qualitative.

3.7.1 Quantitative Part

There were two instruments in the present study which were used to measure concern stages and technology integration self-efficacy belief of pre-service teachers: the Stages of Concern Questionnaire (SoCQ) and the technology integration self-efficacy belief survey. Creswell and Clark (2007) stated that validity in quantitative research means researchers can make relevant inferences from the results to a population.

George, Hall and Stiegelbauer (2006) stated that the validity of SoCQ was examined by developers in regard to how scores on stages of concern related each other. They conducted a pilot study including 195 items in two different studies and described subscales with the questionnaires of 363 subjects. According to results of statistical analysis, they concluded that seven factors explained more than 60% of the common variance. Accordingly, they had interviews with subjects who participated in the study and the results revealed that participants' scores correlated with the interview data. After that, the developers reduced the number of items in the questionnaire from 195 to 35, conducted validity tests in eleven studies over two years, and finalized the questionnaire. To back this up, Wang, Ertmer, and Newby (2004) stated that they validated the survey in terms of content and construct validity. They worked with a group of experts in the field of self-efficacy to examine the content of the survey. Based on the recommendations of experts, necessary revisions were made in the survey. After that, the developers implemented the survey and formed the construct validity of the instrument. Therefore, one can reliably state that the instruments in the present study are valid to be administered.

3.7.2 Qualitative Part (Credibility and Transferability)

In qualitative studies, validity issues differ from quantitative studies. Creswell and Clark (2007) pointed out that validity in qualitative research means checking the information for accuracy. Accordingly, there are different sort of strategies in the literature which indicate how validity can be measured in a qualitative study. The following strategies were utilized in the present study:

- **Prolonged engagement**: It is one of the most important strategies that help to establish the validity of qualitative studies. Prolonged engagement occurs when researchers engage with data sources for a long time in order to observe the research context independent of themselves (Yıldırım and Şimşek, 2013; Lincoln and Guba, 1985). In the present study, the researcher attended all sessions of the course, led the design activities, monitored the pre-service teachers and collected quantitative and qualitative data during the semester.
- **Triangulation**: Triangulation is another strategy used in the present study in order to establish the credibility. According to Patton (2001), there are four kinds of triangulation methods to establish the credibility of qualitative studies, which are "*Methods Triangulation*", "*Triangulation of sources*", "*Analyst Triangulation*", "*Theory/perspective triangulation*" (p. 556). In the present study, the researcher collected different sources of data at different times by using different methods. He administered the SoCQ and technology integration self-efficacy belief survey. In addition, he also carried out individual and focus group interviews with nearly all pre-service teachers. All these data sources provided many opportunities for the researchers to look from a broad perspective.
- **Persistent observation**: This strategy can provide critical insights to the researchers in the context of the study. Lincoln and Guba (1985) pointed out that "*If the purpose of prolonged engagement is to render the inquirer open to the multiple influences - the mutual shapers and contextual factors - that impinge upon the phenomenon being studied, the purpose of persistent observation is to identify those characteristics and elements in the situation that are most relevant to the problem or issue being pursued and focusing on them in detail. If prolonged engagement provides scope, persistent*

observation provides depth" (p. 304). Accordingly, the present study was carried out in the context of the "Instructional Principles and Methods" course which took 14 weeks and had 3 class hours per week. The researcher attended all classes every week and observed the classroom during 14 weeks.

- **Peer debriefing**: Peer debriefing is a process in which researchers seek alternative perspectives from their peers in order to ensure that as many aspects of the research are considered as possible (Lincoln and Guba, 1985). In other words, a peer reviews and asks questions about the process of research in this strategy. In the present study, the researcher discussed each step of study with his supervisor. In addition, he also discussed with his peers throughout the study.
- **Thick Description**: Thick description is used as a type of external validation in qualitative studies. It can increase the transferability of a study to other settings, situations or participants (Lincoln and Guba, 1985). In the present study, each step of the research was explained in a detailed way in order to make explicit to readers. Accordingly, the design of the study, participants, data collection instruments and procedure, data analysis and the role of the researcher were explicitly described in the method section. In addition, as Yıldırım and Şimşek (2013) suggested, some direct quotations from both focus group and individual interviews were presented in the result section.

3.8 Reliability of the Study

Reliability is described as consistency of scores collected. In other words, how consistent the scores are from one measurement to other with the same instrument (Fraenkel, Wallen, and Hyun, 2012). Since the present study includes both quantitative and qualitative data, the reliability issues of both types of data are presented in two parts as quantitative and qualitative.

3.8.1 Quantitative Part

Creswell and Clark (2007) stated that reliability quantitative research means scores collected from participants are consistent over time. They pointed out that reliability is assessed by the help of reliability coefficient or instrument test-retest results.

The reliability of SoCQ and technology integration self-efficacy belief survey had been evaluated in terms of alpha coefficients. The coefficient values of SoCQ ranged from 0.64 to 0.83, with six of the seven coefficients being above 0.70 (See *Table **3.2***). In addition, the values of test-retest correlation of SoCQ ranged from 0.65 to 0.86, with sixth of seven correlations being above 0.70 (See *Table **3.3***) (George, Hall and Stiegelbauer, 2006). On the other hand, Wang, Ertmer, and Newby (2004) stated that the coefficients of technology integration self-efficacy belief survey were 0.94 for pre-survey and 0.96 for post-survey. These values indicate that the both instrument is reliable.

3.8.2 Qualitative Part (Dependability)

The concept of reliability in quantitative studies is different as opposed to qualitative studies. In qualitative studies, dependability is used instead of reliability as an alternative term, which indicates that results are consistent and can be repeated under similar conditions (Lincoln and Guba, 1985). Although it may not be possible to ensure the reliability in qualitative studies because a case can differ from one situation to another (Yıldırım and Şimşek, 2013; Creswell and Clark, 2007), Lincoln and Guba (1985) suggested that an external audit is one of the strategies to ensure the dependability of the study. In the present study, an external audit was utilized for the consistency of results.

- **External Audit:** Lincoln and Guba (1985) stated that external audit is when a researcher who is not involved in the research process, evaluates the accuracy of data and examines whether the findings are supported by data or not. In the present study, an external auditor discussed with the researcher to build a consensus on the codes and themes. In addition, the audit examined whether the data and conclusion of the study were consistent with each other.
- **Interrater Reliability**: In order to increase the reliability of the qualitative data, another graduate student from the department of Computer Education and Instructional Technology also analyzed three individuals and one focus group interviews as an interrater. Firstly, the researcher clarified the purpose, research questions, and research design of the study in detail. The contextual framework of the study was provided to the graduate student and discussed with him so

that he would be able to comprehend the critical points in the qualitative data and analyze it. Following that, the graduate student separately analyzed the data and then discussed with the researcher. While the reliability score of focus group interviews was calculated using inter-rater agreement formula (Miles & Huberman, 1994), the reliability score of individual interviews was calculated using Nvivo 11' interrater agreement feature.

$$\text{Reliability} = \frac{\text{Number of agreements}}{\text{Number of agreements} + \text{Number of disagreements}}$$

As for the focus group interviews, the formula stated above was used and the reliability score was found 90%, which indicates a good score for inter-rater reliability (Miles and Huberman, 1994). As for individual interviews, Nvivo 11 were run to compare the codings. Since the Nvivo 11 produces the scores of agreement percentages for each theme separately, results were exported to MS Excel and the average score of agreement percentages was calculated. The average score of agreement was found 96%, which also indicates a good score for inter-rater reliability (Miles and Huberman, 1994).

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CHAPTER 4

RESULTS

An embedded quasi-experimental mixed methods research design was carried out to answer the research questions of the present study. The purpose of the study is to examine the influence of LBD activities carried out in the context of Instructional Principles and Methods course on pre-service teachers' stages of concern and self-efficacy beliefs for technology integration in English Language Teaching. To this end, while quantitative data were collected from stages of concern questionnaire (George, Hall and Stiegelbauer, 2006) and technology integration self-efficacy belief survey (Wang, Ertmer and Newby, 2004), qualitative data were collected from focus group and individual interviews. The reason for collecting qualitative data is to provide support for the quantitative results.

A series of analysis were conducted to answer the research questions. The primary analysis of the present study was the quantitative methods which include descriptive statistic and paired sample t-test (Pallant, 2007) in order to find out the change occurred on SoC and technology integration self-efficacy beliefs of English language pre-service teachers. The secondary analysis of the present study was the qualitative methods which include descriptive and content analysis (Yıldırım and Şimşek, 2013) in order to expand the quantitative results. The results of each research question were presented sequentially.

Participants included 24 (22 females and 2 male) second-grade English language pre-service teachers. Their experience with Web 2.0 tools is presented in *Table **4.1***.

Table 4.1 Pre-service teachers' experience of Web 2.0 tools

Time	*f*	*Percent*
Never	0	0
1 Year	4	16.67
2 Years	3	12.50
3 Years	9	37.50
4 Years	0	0
5 Years or more	8	33.33

According to *Table **4.1***, all pre-service teachers have involved in using at least one of the Web 2.0 tools for a year. Out of 24 pre-service teachers, 4 pre-service teachers (16.67%) have involved in using at least one of Web 2.0 tools for 1 year, 3 pre-service teachers (12.50%) have involved in using at least one of Web 2.0 tools for 2 years, 9 pre-service teachers (37.50%) have involved in using at least one of Web 2.0 tools for 3 years, and 8 pre-service teachers (33.33%) have involved in using at least at least one of Web 2.0 tools for 5 years or more. At the beginning of the semester, pre-service teachers were asked whether they took any technology integration related course. Of all pre-service teachers, 20 pre-service teachers stated that they took one technology integration course and four pre-service teachers stated that they did not take any technology integration course in the previous semesters.

Pre-service teachers were also asked to express their level of use of Web 2.0 tools at the beginning of the semester. Their level of use perceived by themselves was presented in Table 4.2.

Table 4.2. Self-reported Level of Web 2.0 tools use

Level of Use	*f*	*Percent*
Non-User	0	0
Novice	3	12.50
Intermediate	19	79.17
Old Hand User	2	8.34
Past User	0	0

According to Table 4.2, three pre-service teachers (12.50%) perceived themselves as novice user, 19 pre-service teachers (79.17%) perceived themselves as intermediate user, and two pre-service teachers (8.34%) perceived themselves as old hand user. None of the pre-service teachers perceived themselves neither non-user nor past user.

4.1 Research Question 1:

1. Is there a significant difference in pre-service teachers' Stages of Concern Questionnaire scores for technology integration in English Language Teaching after attending Learning Technology by Design activities implemented in the Instructional Principles and Methods course?

In order to answer the research question, paired sample t-test was firstly conducted. At the beginning, the assumptions of paired sample t-test were checked. Field (2009) stated that dependent t-test has two assumptions. The first one is the distribution of sampling should normally be distributed and the second one is the data should be measured at the interval level (p.326). Since SoCQ is at the interval level, the second assumption was already met. In regard to the first assumption, Field pointed out that it is needed to compute the differences between scores so that this can be used to test the normality of the distribution (p.329). After the difference scores were calculated between pre- and post-tests, the normality of the distribution was tested.

Table 4.3 Test of Normality

	Kolmogorov-Smirnov		Shapiro-Wilk	
	Statistic	*Sig.*	*Statistic*	*Sig.*
Stage 0- Difference Scores	0.13	0.20	0.96	0.43
Stage 1- Difference Scores	0.14	0.20	0.96	0.45
Stage 2- Difference Scores	0.14	0.18	0.93	0.13
Stage 3- Difference Scores	0.11	0.20	0.95	0.40
Stage 4- Difference Scores	0.14	0.20	0.96	0.43
Stage 5- Difference Scores	0.12	0.20	0.96	0.44
Stage 6- Difference Scores	0.13	0.20	0.95	0.31

Pallant (2007) stated that Kolmogorov-Smirnov statistic could be used to test the normality of distribution. Non-significant results indicate that the scores are normally distributed (p.62). Results of Kolmogorov-Smirnov and Shapiro-Wilk tests in *Table **4.3*** indicated that the distribution was normally distributed since there are not significant results ($p>0.05$). Since the assumptions were met, conducting paired sample t-test was appropriate in the present study.

Table 4.4 Descriptive information and the results of paired sample t-test

	Pre-tests		Post-Tests				
	M	*SD*	*M*	*SD*	*df*	*t*	*p*
Unconcerned	17.58	5.52	19.47	4.39	23	-1.94	0.06
Informational	24.87	5.77	23.26	3.82	23	1.49	0.15
Personal	26.20	6.20	26.21	5.17	23	0.00	0.99
Management	18.66	6.47	19.39	6.62	23	-0.48	0.63
*Consequence	22.75	6.58	25.52	4.87	23	-2.34	0.02*
Collaboration	19.00	9.38	20.04	8.67	23	-0.57	0.57
Refocusing	22.83	6.06	22.78	5.06	23	0.04	0.96

*$p<0.05$

The results of descriptive analysis and paired sample t-test were presented in *Table **4.4***. Paired sample t-test was conducted to evaluate the effect of LBD activities on stages of concern (SoC) of English language pre-service teachers for integrating Web 2.0 tools into English Language Teaching. There was a statistically significant increase in "Consequence" concern stages of pre-service teachers from pre-test scores (*M*=22.75, *SD*=6.58) to post-test scores (*M*=25.52, *SD*=4.87), t (23) =-2.34, p=.02.

Since the result was statistically significant, the effect size was also calculated to know the magnitude of the intervention's effect. The calculation of effect size was done by hand since SPSS does not produce it for t-tests. Eta squared which is one of the most commonly used effect size statistics was used to calculate the effect size of "Consequence" concern. Pallant (2007) stated its procedure to calculate and interpret eta squared (p.240).

$$\text{Eta squared} = \frac{t^2}{t^2 + df}$$

$$\text{Eta squared} = \frac{(-2.34)^2}{(-2.34)^2 + 23}$$

$$\text{Eta squared} = 0.19$$

Eta squared value was found 0.19. Pallant explained how to interpret the values of eta squared which is .01= small effect, .06=moderate effect, and .14= large effect. Stated eta squared value of 0.19, it can be concluded that there was a large effect, with a substantial difference on consequence concerns. George, Hall and Stiegelbauer (2006) stated that individuals focus on the influence of innovation on students in consequence concern stage. They consider the outcomes, performances, and competencies of students gained as a result of the implementation of the innovation. In the present study, it could be concluded that the considerations of English language pre-service teachers about the influence of integrating Web 2.0 tools on students in ELT classes have risen substantially.

On the other hand, the results of other concern stages were not found statistically significant. Below is the result of each concern stage.

- Paired sample t-test indicated that there was not statistically significant difference on "Unconcerned" concern stages of pre-service teachers from pre-test scores (*M*=17.58, *SD*=5.22) to post-test scores (*M*=19.47, *SD*=4.39), t (23) = -1.94, p>0.05. Although there was an increase in post-test scores, it was not statistically significant. George, Hall and Stiegelbauer (2006) pointed out that individuals have little concern or involvement with the innovation at this stage. Hence, it could be concluded that interest or involvement of pre-service teachers with Web 2.0 tools did not change after LBD activities conducted throughout the semester.
- Paired sample t-test indicated that there was not statistically significant difference on "Informational" concern stages of pre-service teachers from pre-test (*M*=24.87, *SD*=5.77) to post-test scores (*M*=23.26, *SD*=3.82), t (23) = 1.49, p>0.05. Although there was a decrease in post-test scores, it was not statistically significant. George, Hall and Stiegelbauer (2006) stated that individuals indicate general awareness and interest in learning more in regard to using the innovation. In the present study, this concern stage did not change significantly which indicates that pre-service teachers' general awareness and interest level to learn more about Web 2.0 tools did not differ after LBD activities conducted throughout the semester.
- Paired sample t-test indicated that there was not statistically significant difference on "Personal" concern of pre-service teachers from pre-test scores (*M*=26.20, *SD*=6.20) to post-test scores (*M*=26.21, *SD*=5.17), t (23) = 0.00, p>0.05. George, Hall and Stiegelbauer (2006) pointed out that individuals are uncertain about their adequacy to use the innovation at this stage. In the present study, there was a non-significant slight difference between pre- and post-test scores of personal concerns which indicate that pre-service teachers' self-doubts about themselves in regard to integrating Web 2.0 tools into ELT classes did not change after LBD activities conducted throughout the semester.
- Paired sample t-test indicated that there was not statistically significant difference on "Management" concern stages of pre-service teachers from pre-test scores (*M*=18.66, *SD*=6.47) to post-test scores (*M*=19.39, *SD*=6.62), t (23) = -0.48, p>0.05. Although there was an increase in post-test scores which indicates that "Management" concerns of English language pre-service

teachers raised, however; it was not statistically significant. George, Hall and Stiegelbauer (2006) noted that individuals focus on the processes and tasks of using the innovation at this stage. In the present study, concerns of pre-service teachers about processes and tasks when Web 2.0 tools integrated into ELT classes did not differ after LBD activities conducted throughout the semester.

- Paired sample t-test indicated that there was not statistically significant difference on "Collaboration" concern of pre-service teachers from pre-test scores (*M*=19.00, *SD*=9.38) to post-test scores (*M*=20.04, *SD*=8.67), t (23) = -0.57, p>0.05. Although there was an increase in post-test scores which indicates that "Collaboration" concerns of English language pre-service teachers raised, it was not statistically significant. George, Hall and Stiegelbauer (2006) stated that individuals focus on working with others regarding the use of the innovation. In the present study, it can be concluded that the concerns of pre-service teachers related to coordinating and cooperating with other individuals did not differ significantly after LBD activities conducted throughout the semester.
- Paired sample t-test indicated that there was not statistically significant difference on "Refocusing" concern of pre-service teachers from pre-test scores (*M*=22.83, *SD*=6.06) to post-test scores (*M*=22.78, *SD*=5.06), t (23) = 0.04, p>0.05. There was a non-significant slight difference between pre- and post-test mean scores in terms of "Refocusing" concerns, which indicates that "Refocusing" concerns of English language pre-service teachers did not change after the LBD activities. George, Hall and Stiegelbauer (2006) pointed out that individuals focus on enhancing the usage of the innovation or replacing it with a more powerful alternative. Hence, it could be concluded that the concerns of pre-service teachers about enhancing the usage of Web 2.0 tools in ELT classes or replacing Web 2.0 tools with a more powerful alternative did not change significantly after LBD activities conducted throughout the semester.

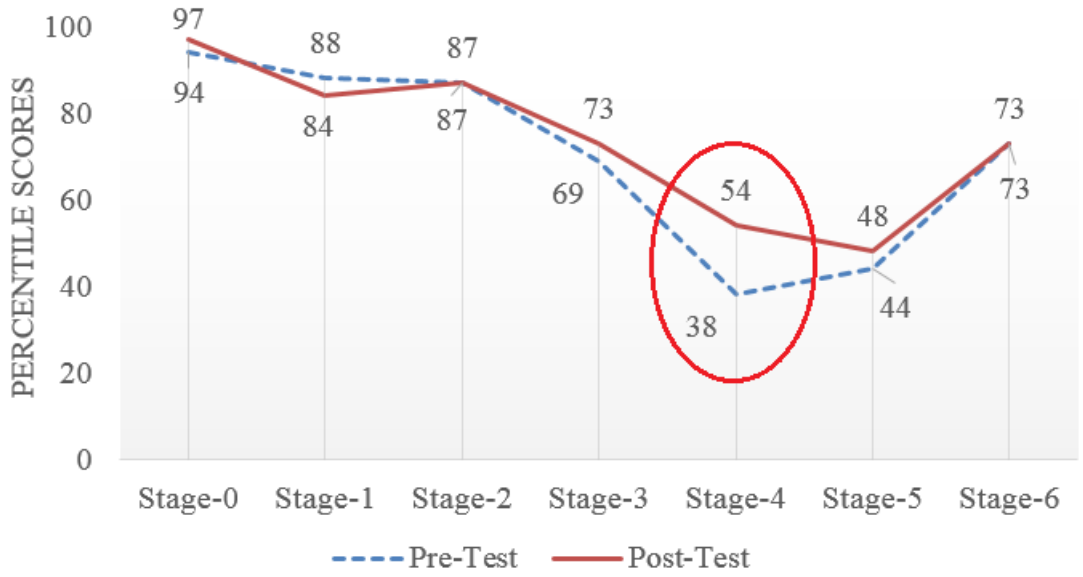

Figure 4.1 Line Graph of Group Percentile Scores

In addition to paired sample t-test, group percentile scores were calculated based on the mean scores of each concern stage. The mean scores of each stage were calculated and then converted to the percentile scores by using the percentile conversion chart for the stages of concern questionnaire (SoCQ) (George, Hall, and Stiegelbauer, 2006, p.29) (See Appendix-E). George, Hall and Stiegelbauer (2006) pointed out that the percentile scores allow researchers to see the intensity and diversity of concerns within the group and facilitate the interpretation of SoCQ data.

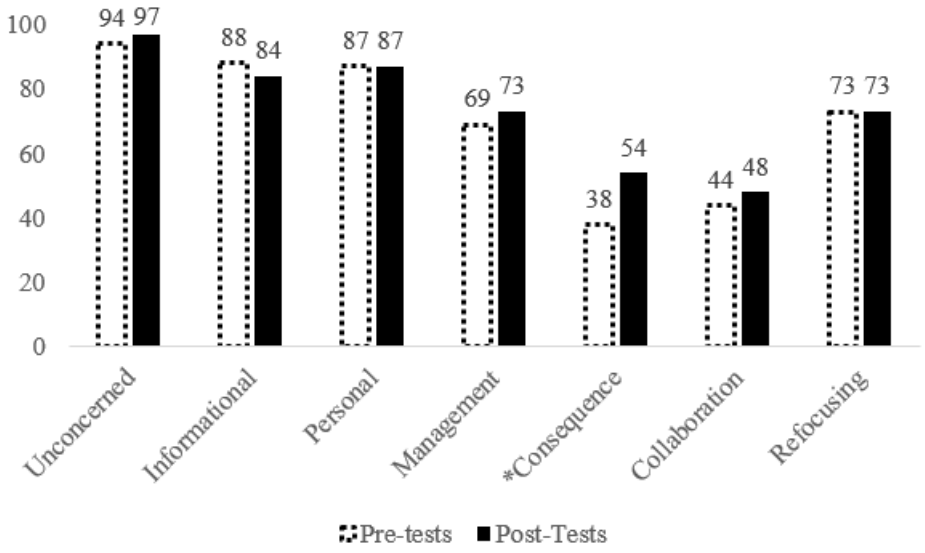

Figure 4.2 Bar Graph of Group Percentile Scores

As seen from Figure 4.1 and Figure 4.2, the predominant concern stage is around self-concerns (Unconcerned, Informational and Personal) in both pre- and post- test. George, Hall and Stiegelbauer (2006) state that the concerns of "nonusers" are highest on Stage 0 (Unconcerned), 1 (Informational), 2 (Personal) and lowest on Stages 4 (Consequence), 5 (Collaboration), and 6 (Refocusing). They pointed out that there might be some variations in the intensity of concerns depending on the type of innovation and situation. Therefore, it could be inferred that the pre-service teachers are "nonuser" of Web 2.0 tools and this situation did not change after the LBD activities. It may stem from that they are not in-service yet and hence not able to work with any Web 2.0 tools in real ELT classes.

The most intense concern is Stage 0 (Unconcerned) which indicates that pre-service teachers are not fully aware of the innovation or more concerned about other things (George, Hall, and Stiegelbauer, 2006). Having the most intense concern of Stage 0 did not change after the LBD activities conducted throughout the semester in the context of Instructional Principles and Methods course. Therefore, it could be concluded that pre-service teachers are more concerned about other things, innovations or activities as opposed to integrating Web 2.0 tools in ELT classes. In addition, Stage 1 (Informational) and 2 (Personal) concerns are also high intensity in both pre- and post- tests. It could be inferred that the pre-service teachers are still interested in learning more about Web 2.0 tools and have still doubts about their adequacy to integrate the Web 2.0 tools in ELT classes remaining almost same after the LBD activities conducted throughout the semester in the context of Instructional Principles and Methods course.

Although Stage 4 (Consequence) concern is the lowest intensity at first, its intensity increased statistically significant after the LBD activities conducted throughout the semester in the context of Instructional Principles and Methods course. It could be said that pre-service teachers were not concerned about the impact of integrating Web 2.0 tools on students at the beginning, however; this situation changed afterward. Therefore, it could be inferred that LBD activities might be helpful to increase the considerations of pre-service teachers about the consequences or outcomes of integrating Web 2.0 tools in ELT classes on students. However, the intensity of this concern stage is not predominant comparing to self-concerns (Stage 0, 1, and 2) which

are at high intensity both in pre- and post-tests. This might be due to being "nonuser" considering pre-service teachers have not had real experiences about integrating Web 2.0 tools in ELT classes up until now.

As seen from Figure 4.1, Stage 6 (Refocusing) concern tails up both in pre- and post-tests. George, Hall and Stiegelbauer (2006) pointed out that when refocusing concern stage tails up, it could be concluded that individuals have other ideas that can enhance the innovation or replace with an alternative. They said that this could also be the indication of resistance toward using the innovation. Therefore, it could be concluded that pre-service teachers might have some ideas that could enhance the usage of Web 2.0 tools or be better than integrating Web 2.0 tools in ELT. Having the same intensity at the beginning and end of the semester might indicate that the considerations of pre-service teachers did not change after the LBD activities conducted.

Having medium intensity of Stage 3 (Management) concern is the indication of consideration which is related to time, logistics or other managerial problems in regard to integrating Web 2.0 tools (George, Hall, and Stiegelbauer, 2006). It could be concluded that the concerns of pre-service teachers about the processes and tasks of integrating Web 2.0 tools in ELT classes remained alike and at medium intensity after the LBD activities conducted throughout the semester in the context of Instructional Principles and Methods course. Similarly, the considerations of pre-service teachers about collaboration with others about integrating Web 2.0 tools into educational activities (Stage 5- Collaboration) remained low intensity and alike in both pre- and post- tests which might indicate that the considerations of pre-service teachers are mostly different from coordinating and cooperating with others in regard to the use of Web 2.0 tools and it could be inferred that LBD activities did not change the collaboration efforts of pre-service teachers.

4.2 Research Question 2:

2. How do Learning Technology by Design activities implemented in the Instructional Principles and Methods course influence the pre-service teachers' stages of concern for technology integration in English Language Teaching?

As stated above, an embedded quasi-experimental mixed methods design was implemented as a sort of mixed methods design. In the present study, qualitative data was used as the secondary source of data.

The procedures of descriptive and content analysis (Yıldırım & Şimşek, 2013) were followed to analyze the data. The main and sub themes were firstly created by reviewing the SoC related literature and concluded including the concepts and themes emerged in the process of content analysis. The main themes and sub-themes of focus group and individual interviews and their frequencies were presented in *Table **4.5*** and *Table **4.6***.

Table 4.5 Themes Regarding the Influence of LBD activities on pre-service teachers' Concern Stages

Focus Group Interviews				
Main Themes	**Sub-themes**		*N*	*f*
Unconcerned	Increased willingness to integrate Web 2.0 tools in ELT		6	7
Informational	Knowledge of using Web 2.0 tools in ELT		14	24
	Awareness of the factors influencing the use of Web 2.0 tools in ELT		9	14
Personal	Knowledge of designing lesson activity with Web 2.0 tools		14	37
	Lack of PSTs' teaching experience in LBD		5	7
Management	Increased awareness of the implementation process of using Web 2.0 tools in ELT		5	7
Consequence	Positive opinions about student attitudes when using Web 2.0 tools		8	14
	Positive opinions about learning outcomes of students when using Web 2.0 tools		12	28
Collaboration	Thoughts about peer feedback	Benefits	12	18
		Drawbacks	5	6
Refocusing	Knowledge for enhancing Web 2.0 tools		2	2
	Intentions for the future usage of Web 2.0 tools		9	11

f = Code frequency

Table 4.6 Themes Regarding pre-service teachers' Concern Stages about technology integration in ELT

Individual Interviews				
Main Themes	**Sub-themes**		*N*	*f*
Unconcerned	Positive willingness to integrate Web 2.0 tools in ELT		5	5
	External Factors inhibiting PSTs' interest in Web 2.0 tools		6	9
	Internal Factors inhibiting PSTs' interest in Web 2.0 tools		5	8
Informational	Knowledge of using Web 2.0 tools in ELT		12	16
	Perceived required factors influencing PSTs' use of Web 2.0 tools in ELT	Student Competency	4	4
		Technical Facilities	9	11
		Teacher Competency	8	8
	Willingness to learn more information about Web 2.0 tools	Positive	9	11
		Negative	1	1
Personal	Positive influence of using Web 2.0 tools on the teaching profession		7	8
	The influences of using Web 2.0 tools on the role of teacher in the classroom		9	12
	Lack of teaching experience		8	18
	Influence of using Web 2.0 tools in terms of teachers' allocated time and energy	Positive	10	13
		Negative	2	3
Management	Perceived difficulties in classroom management when using Web 2.0 tools		12	20
Consequence	The positive influences of using Web 2.0 tools on the attitudes of students		12	14
	The positive influences of using Web 2.0 tools on the learning outcomes of students		12	21
Collaboration	Willingness to collaborate with FLE teachers	Positive	8	11
		Negative	3	3
	Willingness to collaborate with Other teachers	Positive	2	3
		Negative	10	12
Refocusing	Knowledge of enhancing Web 2.0 tools		10	11
	Intentions for the future usage of Web 2.0 tools	Positive	11	21
		Negative	2	4

f = Code frequency

Since the present study is the embedded mixed methods design, each qualitative finding is embedded in the associated quantitative finding in order to explain quantitative results and gain a better understanding of the overall purpose of the present study.

As explained before, paired sample t-test was conducted to examine the mean differences of SoC between pre- and post-test scores and group percentile scores were calculated to see how intensity and diversity of SoC change over the course of implementing LBD activities in Instructional Principles and Methods course. Accordingly, the findings of each SoC was sequentially presented below.

Unconcerned

According to the result of the paired sample t-test, there was not a statistically significant mean difference between pre- (M=17.58, SD=5.22) and post-test (M=19.47, SD=4.39) for the stage of Unconcerned ($p>0.05$). In addition, when examined the group percentile scores of English language pre-service teachers from Figure 4.1, it can be seen that Unconcerned is the most intense concern stage before and after the LBD activities conducted. In other words, it could be said that English language pre-service teachers experienced highly the stage of Unconcerned in regard to integrating Web 2.0 tools in ELT classes whether they were exposed to LBD activities or not. George, Hall and Stiegelbauer (2006) stated that individuals have little interest or involvement toward the innovation at this stage and they may be more concerned about other things, innovations or activities. Accordingly, it could be inferred that pre-service teachers might have little concern with integrating Web 2.0 tools and be more concerned about other things.

Some of the pre-service teachers expressed in the focus group interviews that engaging LBD activities increased their willingness to integrate Web 2.0 tools in ELT. For instance, one of the pre-service teachers said that,

> *There were Web 2.0 tools that I enjoyed while I was preparing the activities. I thought that my students would also enjoy when I used them in the classroom. Hence, these activities aroused my interest and accordingly I thought that I*

could arouse the interest of students since I enjoyed them as well (13May1-PST-2).

Furthermore, in the individual interviews, pre-service teachers stated external and internal factors inhibiting their interest in Web 2.0 tools. As for external factors, most of pre-service teachers explained that they prioritized their major field and spent most of their time with the exams and assignments to improve themselves. Although some of these pre-service teachers stated they were interested in Web 2.0 tools, they expressed that they put more effort into the works of their major field. For instance, one of the pre-service teachers said that,

We have to do more in our department and accordingly I have more responsibilities and homework for my department. I am interested but not much. So inevitably, I prioritize my grades and try to increase them. Since the grades of other courses are my major field, I firstly need to increase their grades (II- PST-6).

As for the internal factors, pre-service teachers expressed that they were not interested in using technologies and Web 2.0 tools did not appeal to them; therefore, they were unconcerned. For instance, one of the pre-service teachers said that,

I do not think I am interested. I mean I have no interest in technology in general. For example, I do not have social media accounts such as Facebook as well. That is, I am not very interested (II-PST-1).

All in all, pre-service teachers are mostly not very concerned about integrating Web 2.0 tools into classrooms because they might have other priorities that they need to put more effort or they might not be interested in using technologies. Therefore; based on the findings, it could be concluded that statistically significant mean difference between pre- and post-test scores of Unconcerned stage was not found and its intensity remained high before and after the LBD activities conducted.

Informational

According to the result of the paired sample t-test, there was not a statistically significant mean difference between pre- (M=24.87, SD=5.77) and post-test

(*M*=23.26, *SD*=3.82) scores for the stage of Informational ($p>0.05$). As seen from Figure 4.1, it could be understood that Informational concern is the second highest concern stage with Personal concern. Even more, the intensity of this concern stage remained almost the same after the LBD activities conducted. George, Hall and Stiegelbauer (2006) pointed out that individuals indicate general awareness and are interested in learning more details about the innovation at this stage. Although there was a slight decrease in post-test scores which indicate that pre-service teachers are less interested in learning about Web 2.0 tools as opposed to the pre-test scores, it was not statistically significant. Therefore, it could be understood that pre-service teachers have a general awareness and are interested in learning more about integrating Web 2.0 tools.

According to the findings of focus group interviews, pre-service teachers pointed out that engaging LBD activities increased their knowledge about Web 2.0 tools and on what conditions they could be used. For instance, one of the pre-service teachers said that,

> *We noticed that we did not know many web sites. That is, we learned new and different web sites that we covered in the lab activities (11May-PST-15).*

In addition to that, some of the pre-service teachers stated that they learned on what conditions Web 2.0 tools could be used in ELT. For instance, one of the pre-service teachers said that,

> *Exploring the limitations and writing Web 2.0 tools' pros and cons contribute to our knowledge about where we can use these tools and where we cannot use (30Mar-PST-8).*

Accordingly, in the individual interviews, all pre-service teachers expressed that they were knowledgeable about the possibilities of using Web 2.0 tools. While some of the pre-service teachers pointed out that Web 2.0 tools could be used to develop the necessary skills of English language such as writing, listening and vocabulary, others said that they could be used for the variety of purposes both in daily life and education. For instance, one of the pre-service teachers said that,

They can be used for many purposes but I speak for my own major field. When I become a teacher one day, I can use them for listening and speaking classes. Apart from these, there was a tool, Socrative, which was very good for testing. Both teachers can assess students and students can assess themselves with this tool. So I think I can use them more for my major field (II-PST-6).

Besides, in the individual interviews, many pre-service teachers emphasized the importance of technical facilities of the environment (computer, tablet PC and high-speed internet connection), student and teacher competency as required factors influencing their use of Web 2.0 tools in ELT. While some of the PSTs stated the significance of being knowledgeable about technologies and having self-efficacy for technology usage, others stressed the value of ensuring classroom management to integrate Web 2.0 tools.

One of those who emphasized the importance of technical facilities of the environment said that,

Physical conditions need to be good, of course. That is, internet connection is required since they generally work on the internet. Besides, there must be enough number of computers in the classroom. If necessary, tools might require to be supported by the help of smart boards in order for me to use in the school (II-PST-2).

One of those who emphasized the importance of student competency as a required factor said that,

I think student profile is also important. For instance, while a student is very knowledgeable about computers, others might not have computers and internet connection since they come from low socio-economic background. Therefore, I think student profiles should be equal (II-PST-7).

One of those who emphasized the importance of teacher competency as a required factor said that,

Firstly, I know that computer literacy is needed. We need to know on what purposes we will use the tools. We need to know how to use computers. We

need to know the features of that Web 2.0 tool so that we can use it depending on the features. We have to look at the perspectives of students as well, if we give an input to them. That is, we need to know how students will use the tool, how we will assess students when they use. Furthermore, we also need to know whether the tool is related to the lesson or not and how the tool is relevant to the subject (II-PST-1).

Although pre-service teachers indicated that they are knowledgeable about Web 2.0 tools and aware of the factors influencing their use, most of them stated that they wanted to learn more about the Web 2.0 tools to integrate into ELT classes. For instance, one of the pre-service teachers said that,

I definitely want. Because the more choices you have, the easier it is to choose the right one among them. That is, if we know only one tool, maybe we will use that one in places that are not suitable. It can be good if we know more and different sort of tools. For instance, we can say that there is this feature but there is also a limitation, hence it is better if we use another one to remove the limitations. For example, I can say that this tool facilitates communication process among students but other one does not have this feature, therefore, I will have an option to prefer the right tool if I know different sort of tools. Therefore, I think that it is necessary to get more information (II-PST-10).

Moreover, PSTs expressed that they must know more about Web 2.0 tools considering the involvement of students with digital technologies to appeal their needs and wishes. For instance, one of the pre-service teachers said that,

I feel like I have to learn more, hence; I want to learn them. As I explained before, students are now more engaged with computers or similar technological items. That is, education system inevitably changes and accordingly we need to use different methods, techniques and integrate technology. Therefore, I feel like I have to learn more so that I can be an adequate teacher for students (II-PST-6).

All in all, it could be concluded that pre-service teachers are knowledgeable about the possibility of using Web 2.0 tools and the requirements to integrate them. However,

they intended to know more information about Web 2.0 tools. Due to this reason, it might the said that the Information concern stage of pre-service teachers did not significantly change and its intensity remained almost the same after the LBD activities.

Personal

According to the result of the paired sample t-test, there was not a statistically significant mean difference between pre- (*M*=26.20, *SD*=6.20) and post-test (*M*=26.21, *SD*=5.17) scores for the stage of Personal ($p>0.05$). In addition, when examined the group percentile scores of English language pre-service teachers from Figure 4.1, it can be understood that Personal concern is the highest stage with Informational concern after Unconcerned stage and the intensity of Personal concerns remained almost the same after the LBD activities conducted throughout the semester. George, Hall and Stiegelbauer (2006) stated that individuals are not sure about the demands of an innovation and their adequacies to fulfill these demands and more concerned about their role with the usage of innovation. In other words, it could be said that concerns of the individuals are mostly around themselves. They might consider their capabilities, the effects of the innovation on their profession and role, and time and energy commitment in case they use the innovation.

In the focus group interviews, most of the pre-service teachers pointed out that engaging LBD activities increased their knowledge of designing lesson activity supported by Web 2.0 tools. Furthermore, pre-service teachers stated that they learned how they associated the ELT topics to Web 2.0 tools, gained technology integrated lesson activity ideas and how to arrange their prospective teaching to integrate Web 2.0 tools. For instance, one of the pre-service teachers said that,

> *Technology is an integral part of our life. Since new students have grown up with technologies, we have to use them in education. We learned about how we should use technologies, how we can associate the tools with the topics, how we can make more relevant to our classes and how we can benefit from these tools (30Mar-PST-10).*

Accordingly, in the individual interviews, pre-service teachers stated the influence of using Web 2.0 tools on themselves. In terms of the influence of using Web 2.0 tools on the "role of teacher in the classroom", pre-service teachers stated that while the role of the teacher subsides, students become a more dominant role in the classroom. Teachers mostly facilitate or guide students in the process of learning. Hence, the classroom environment changes from teacher-centric to student-centric. For instance, one of the pre-service teachers said that,

> *The class will probably be more student-centered. When I use Web 2.0 tools, students will actively take part in learning process. Therefore; the classroom changes from teacher-centric to student centric (II-PST-2).*

In terms of the influence of using Web 2.0 tools on their "teaching profession", pre-service teachers stated that integrating Web 2.0 tools could have a positive impact on their teaching profession. They also said that it could be a distinctive characteristic to differentiate from those teachers who do not integrate Web 2.0 tools and mostly depend on traditional instructional methods. For instance, one of the pre-service teachers said that,

> *I think it will affect me in a good way. Using technologies properly is an achievement for me since it is not my major field. Knowing technologies is a plus because many teachers in our age may not be able to use them. Besides, students might think that the teacher also knows the things that we are familiar with and accordingly they can participate in the class. Therefore, it is important (II-PST-5).*

In terms of the influence of using Web 2.0 tools on teachers' allocated time and energy, pre-service teachers pointed out that Web 2.0 tools could reduce the time and energy commitment if they can use the right Web 2.0 tools and in an efficient manner. For instance, one of the pre-service teachers said that,

> *I think it is less tiring. We can prepare more activities in short times. For example; although it might be nice to cut and paste a cardboard or picture, this requires more effort and money. Moreover, it may not be as aesthetic as tools do (II-PST-9).*

On the other hand, most of the PSTs underlined the importance of teaching experience. PSTs emphasized that they designed their activities by speculation due to lack of teaching experience and did not practice these activities in a real classroom environment in the context of LBD. Therefore, they said that they were not certain of the effects of Web 2.0 tools on themselves when using them in their prospective teachings. For instance, one of the pre-service teachers said that,

> *Now we guess in our own mind about what kind of deficiencies we can have. When we implement in the classroom, maybe there will be a deficiency of the tool that will never come to our mind. We think as if everything will happen perfectly. After all, it is difficult to get out of the way with speculations(30Mar-PST-8).*

Considering these findings, therefore; it could be said that Personal concerns of pre-service teachers remained almost the same intensity and significant mean difference could not be found between pre- and post-test scores after the LBD activities conducted.

Management

According to the result of the paired sample t-test, there was not a statistically significant mean difference between pre- (M=18.66, SD=6.47) and post-test (M=19.39, SD=6.62) for the stage of Management ($p>0.05$). As also seen from Figure 4.1, Management concerns remain almost the same intensity which indicates the non-significant result of paired sample t-test. George, Hall and Stiegelbauer (2006) stated that individuals focus on the tasks and processes of using the innovations and they consider the topics related to managing, organizing and efficiency. According to the result, it could be concluded that concerns of pre-service teachers about processes and tasks did not differ after LBD activities.

In the focus group interviews, some pre-service teachers pointed out that LBD activities increased their awareness about the implementation process of using Web 2.0 tools in ELT. Furthermore, they said that they considered how to implement Web 2.0 tools in ELT with the help of LBD activities. For instance, one of the pre-service teachers said that,

When we practice here, it will be easier for us when we become a teacher in the future. We practice here and learn better. Therefore, when we become a teacher, we can implement them in our classroom in a better way (30Mar-PST-13).

Although pre-service teachers expressed that Web 2.0 tools could help teachers increase their efficiencies to do activities, they pointed out that they could have difficulty in managing and organizing the tasks and processes when Web 2.0 tools integrated into the classrooms. Pre-service teachers stated that managing classroom and organizing students could be somehow difficult for them since the internet environment is very distractive, attentions of students may be distracted easily. For instance, one of the pre-service teachers said that,

I think I will have difficulty with it because we are in technology era. Even little children know how to use computer and internet before learning writing and reading. Hence, students become absolutely distracted and I think I cannot control them and manage the classroom (II-PST-7).

All in all, it could be concluded that pre-service teachers could have difficulty in managing and organizing the tasks and processes because students might be very active in the internet environment which is distractive for them. Therefore, they stated that they might not be able to manage and organize the tasks and processes since they did not have enough experience. Due to these reasons, it could be inferred that Management concerns of pre-service teachers remained almost the same intensity and significant mean difference could not be found from pre- to post-test scores after LBD activities conducted throughout the semester.

Consequence

According to the result of the paired sample t-test, there was a statistically significant mean difference between pre- (M=22.75, SD=6.58) and post-test (M=25.52, SD=4.87) scores of Consequence stage ($p<0.05$). Since there was a significant difference, the effect size was also calculated to understand the magnitude of the intervention's effect. Found eta squared value of 0.19 indicated that there was a large effect, with a considerable difference on consequence concerns of pre-service teachers. As seen

from Figure 4.1, it could be seen that Consequence concern was the lowest intensity before the LBD activities, however; the intensity of this concern stage increased substantially after the LBD activities conducted. George, Hall and Stiegelbauer (2006) pointed out that individuals focus on the impact of innovation on students in consequence concern stage. In other words, they consider the outcomes, performances, and competencies of students obtained as a consequence of the implementation of the innovation. Subsequently, it could be inferred that the considerations of English language pre-service teachers about the impacts of integrating Web 2.0 tools on students rose substantially after the LBD activities conducted throughout the semester in the context of Instructional Principles and Methods course.

In the focus group interviews, most of the PSTs expressed that they learned different Web 2.0 tools that can attract the attentions of students and considered how the activities designed with these tools could have an impact on students' outcomes in the context of LBD. For instance, one of the pre-service teachers said that,

> *We designed plans for students. We can prepare entertaining lesson activities aiming at students. Therefore, I think it created awareness for us (11May-PST-15).*

In this direction, pre-service teachers stated that Web 2.0 tools can draw the attentions of students and increase their interest in lesson. They accordingly said that these tools can enhance the learning of the students by activating them in the process of learning. For instance, one of the pre-service teachers said that,

> *A language consists of a lot of skills such as vocabulary, speaking, listening etc. I think teaching these skills with traditional methods is not easy. Hence, we can attract the attentions of students, facilitate their learning by using different Web 2.0 tools considering the many options especially for young leaners. For example, we can make a video or flashcards that will attract attention and facilitate learning. Therefore, I think we can use them (11May-PST-13).*

All in all, pre-service teachers considered that the integration of Web 2.0 tools could have a positive impact on the learning and attitudes of students. In other words, it could

be pointed out that LBD activities can contribute to the considerations of English language pre-service teachers about the possible influences of Web 2.0 tools on students. Therefore, it could be said that a significant difference was found in "Consequence" concerns of pre-service teachers.

Collaboration

According to the result of the paired sample t-test, there was not a statistically significant mean difference between pre- (*M*=19.00, *SD*=9.38) and post-test (M=20.04, SD=8.67) scores of Collaboration concern (p>0.05). As seen from Figure 4.1, Collaboration is the lowest intense concern stage after the LBD activities conducted. George, Hall and Stiegelbauer (2006) stated that individuals want to collaborate with others considering the use of innovation in this stage. Therefore, it could be concluded that pre-service teachers might not be very interested in collaborating with others in regard to the integration of Web 2.0 tools based on the result of paired sample t-test and group percentile scores.

In the context of LBD, pre-service teachers gave peer feedback on each other's lesson plans in addition to designing these plans collaboratively. In this process, most of the pre-service teachers especially found peer feedback sessions very beneficial since they were able to notice their missing points in their lesson plans and see different design activities to be used in ELT. For instance, one of the pre-service teachers said that,

> *We saw the missing things that we did not think about or write in our lesson plan from other group lesson plans. Accordingly, we can complete our missing things. Therefore, it could be helpful to us before we submit the final plan (11May-PST-13).*

Additionally, some of pre-service teachers expressed the drawbacks of this activity. They said that they were not certain of the feedbacks since the peers were not expert and some of them were not objective during the assessment. For instance, one of the pre-service teachers said that,

> *It is doubtable about how accurate the feedback that my friend gave was (11May-PST-3).*

As a result, while most of the PSTs stated in the individual interviews that they could collaborate with English language teachers since they teach the same content knowledge, they did not want to collaborate with teachers from other fields. One of those who said that they could collaborate with other English language teachers,

> *I think that we can improve ourselves by exchanging ideas with teachers from the same branch. Same branch teachers would be helpful, if they are knowledgeable as well. Such as we can talk about what tool we can use for a topic (II-PST-2).*

On the contrary, pre-service teachers stated that it could be difficult to collaborate with teachers from other fields because the content knowledge they taught required the different area of expertise. In line with this direction, one of the pre-service teachers expressed that,

> *It seems especially difficult to collaborate with a mathematics teacher, if you are an English language teacher. Because mathematics is a little more abstract, the tools can be used in mathematics could be limited. That is, we have an advantage. English is a world language and we can find millions of resources and add them to a tool by simply copying and pasting. However, it could be difficult for mathematics since it is a little more abstract (II-PST-11).*

All in all, it could be said that majority of the pre-service teachers want to collaborate with the other English language pre-service teachers because they teach the same content and subsequently could help each other. However; on the contrary, the majority of them do not want to collaborate with teachers from other fields because the content they teach is different from other areas. Therefore, it could be inferred that there was not a significant difference between pre- and post-test scores of Collaboration concern after the LBD activities conducted.

Refocusing

According to the result of the paired sample t-test, there was not a statistically significant mean difference between pre- (M=22.83, SD=6.06) and post-test (M=22.78, SD=5.06) scores of Refocusing concern ($p>0.05$). As seen from Figure 4.1,

the intensity of Refocusing stage remained almost the same explaining the non-significant result of paired sample t-test. In addition, this concern stage tailed up before and after the LBD activities. George, Hall and Stiegelbauer (2006) pointed out that when this concern tails up in SoC percentile profile, it can be concluded that individuals might have ideas to enhance the innovation or replace it with an alternative. Moreover, they said that this could also be the indication of resistance toward using the innovation. In that regard, it could be inferred that English language pre-service teachers might consider to enhance the current Web 2.0 tools, replace them with the other innovations which can contribute to teaching and learning process better than Web 2.0 tools or resist to use Web 2.0 tools in ELT classes.

Accordingly, the findings of individual interviews revealed that the majority of pre-service teachers asked to enhance the Web 2.0 tools by considering their limitations that they confronted in the context of LBD activities and to develop new Web 2.0 tools which especially help students speak and pronounce properly. For instance, one of the pre-service teachers said that,

> *We were talking about the limitations while we were filling the tables. For example, although you can make an animation in Zimmertwins, there is no audio or speaking activity. Children should also be able to record their own voices. That is, such things could be developed considering these limitations and added to the tool (II-PST-3).*

In terms of "Future usage", most of the pre-service teachers expressed that they could somehow use Web 2.0 tools in their future ELT classes if the necessary conditions are met for them. For instance, one of the pre-service teachers said that,

> *I would use if there is an environment as we mentioned earlier. Such as, students have tablet PCs and are able to connect to the internet (13May1-PST-1).*

Considering these findings, it could be concluded that pre-service teachers considered to enhance the current Web 2.0 tools by considering their limitations and asked to develop new Web 2.0 tools especially for the speaking skills of students. In addition, it could be understood from the future plans of pre-service teachers about using Web

2.0 tools in ELT classes that they do not ignore these tools and could integrate into their instructions if they have the suitable conditions for them.

4.3 Research Question 3:

3. Is there a significant difference in pre-service teachers' Technology Integration Self-Efficacy Beliefs Survey scores after attending Learning Technology by Design activities implemented in the Instructional Principles and Methods course?

In order to answer the research question, paired sample t-test was conducted. Firstly, the assumptions of paired sample t-test were checked. Field (2009) pointed out that there are two assumptions of the dependent t-test, which are the normal distribution of sampling and interval level of the data (p.326). Since technology integration self-efficacy belief survey is at the interval level, the second assumption was met. In regard to the first assumption, difference scores were computed between pre- and post-test in order to test the distribution of normality (Field, 2009, p.329). Results of Kolmogorov-Smirnov and Shapiro-Wilk tests in *Table **4.7*** indicated that the scores are normally distributed (p>0.05). Since the assumptions were met, conducting paired sample t-test was appropriate in the present study.

Table 4.7 Test of Normality

	Kolmogorov-Smirnov		Shapiro-Wilk	
	Statistic	*Sig.*	*Statistic*	*Sig.*
Difference Scores	0.20	0.01	0.93	0.09

Paired sample t-test was conducted to evaluate the effect of LBD activities on technology integration self-efficacy belief of English language pre-service. There was a statistically significant increase from pre-test scores (*M*=3.59, *SD*=0.55) to post-test scores (*M*=3.82, *SD*=0.41), t (23) =-2.59, p=.01.

Since the result of paired sample t-test was statistically significant, the effect size was calculated to understand the magnitude of the intervention's effect. The effect size was done by hand calculation because SPSS does not produce it for t-tests. Eta squared

value was calculated as a measure of effect size, which is one of the most commonly used effect size measure. Pallant (2007) pointed out how to calculate and interpret eta squared value which is indicated below (p. 240).

$$\text{Eta squared} = \frac{t^2}{t^2 + df}$$

$$\text{Eta squared} = \frac{(-2.59)^2}{(-2.59)^2 + 23}$$

$$\text{Eta squared} = 0.22$$

Eta squared value was found 0.22. Pallant pointed out the values of eta squared which is .01= small effect, .06=moderate effect, and .14= large effect. Stated eta squared value of 0.22, it can be concluded that there was a large effect, with a substantial difference in technology integration self-efficacy beliefs of English language pre-service teachers in regard to integrating Web 2.0 tools into English Language Teaching (ELT) classes. Furthermore, it could be inferred that English language pre-service teachers who were exposed to LBD activities would experience significantly higher self-efficacy belief for technology integration.

4.4 Research Question 4:

4. How do Learning Technology by Design activities implemented in the Instructional Principles and Methods course influence the pre-service teachers' technology integration self-efficacy beliefs?

The findings related to technology integration self-efficacy belief was presented below. The themes emerged from individual interviews and their frequencies were presented in *Table **4.8***.

Table 4.8 Themes Regarding Technology Integration Self-Efficacy Beliefs of Pre-service teachers

Individual Interviews			
Main Themes	**Sub-themes**	*N*	*f*
Web 2.0 tools Integration in ELT	Positive	10	22
	Negative	5	11
Evaluating Students with Web 2.0 tools	Positive	9	10
	Negative	2	2
Helping Students to use Web 2. 0 tools	Positive	11	11
	Negative	1	1

f = Code frequency

The findings of individual interviews revealed that majority of the pre-service teachers have self-efficacy for the integration of Web 2.0 tools in ELT classes. Pre-service teachers pointed out that they could integrate Web 2.0 tools for their prospective instructions. Moreover, while some of the pre-service teachers said that they could confidently integrate Web 2.0 tools that they learned before, others expressed that they could learn and integrate immediately if a Web 2.0 tool is new for them. In line with this direction, one of the pre-service teachers expressed that,

> *I think I can use web 2.0 tools for the appropriate skills. That is; I think I can choose them and prepare proper activities (II-PST-2).*

On the contrary, some of the pre-service teachers also expressed that they did not feel much confident to integrate Web 2.0 tools into their instructions. For instance, one of the pre-service teachers said that,

> *I think I cannot conduct a lesson like this. I do not think that I am adequate since I am not very practical in this kind of things. I do not think I am very practical not only for Web 2.0 tools but also something related to technology (II-PST-1).*

English language pre-service teachers also expressed their technology integration self-efficacy beliefs in terms of evaluating students with the use of Web 2.0 tools and helping students to use of Web 2.0 tools. Regarding "Evaluating Students with Web 2.0 tools", most of the pre-service teachers stated that they could evaluate their students with the help of Web 2.0 tools. They pointed out that Web 2.0 tools can

facilitate this process while teachers evaluate and give feedback to their students. In that regard, they saw themselves confident in terms of using Web 2.0 tools in order to evaluate students. For instance, one of the pre-service teachers said that,

> *Actually, these Web 2.0 tools have many nice aspects. Especially when it comes to the assessment part, it gives the results immediately to teachers. Even more, students can also assess themselves. That is; it becomes easier for me and I can assess in a better way (II-PST-6).*

Regarding "Helping Students to use Web 2. 0 tools", most of the pre-service teachers stated that they could help their students if they need to do something with Web 2.0 tools in their instructions. Besides, one of the pre-service teachers pointed out that she could help students if they were young learners but she could not if they were adults since they could ask complex questions about the use of Web 2.0 tools. In line with this direction, one of the pre-service teachers expressed that,

> *I think I can help students when they have difficulty, since I mostly use the tool that I know. I have confidence in that regard. In order for me to use a tool that I know, firstly I need to feel confident before I use it. That is; when I feel confident, then I can implement it (II-PST-8).*

It could be concluded that the majority of the pre-service teachers have self-efficacy to integrate Web 2.0 tools into ELT classes. On the contrary, the minority of the pre-service teachers expressed that they did not feel confident to integrate Web 2.0 tools into ELT classes. In addition, the majority of the pre-service teachers stated that they felt confident to evaluate their students with the help of Web 2.0 tools and to help their students if they needed aid to use Web 2.0 tools. Therefore, it could be inferred that significant difference was found in technology integration self-efficacy beliefs of pre-service teachers.

4.5 Chapter Summary

Considering all quantitative and qualitative findings in the current study, it could be concluded that involving PSTs in LDB activities seems to be a beneficial way to increase technology integration knowledge and skills English language pre-service teachers.

Table 4.9 Summarization of Quantitative and Qualitative Findings

Stages	Findings	*f* (FG + II)
Unconcerned	Willingness to integrate Web 2.0 tools	12
Informational	Knowledge of integrating Web 2.0 tools	40
	Awareness of the factors influencing the integration of Web 2.0 tools	37
Personal	Awareness of the possible effects of Web 2.0 tools integration on themselves	33
Management	Awareness of the implementation process of using Web 2.0 tools	7
*Consequence	Designing lesson activity knowledge that can promote students' learnings and attitudes	42
Collaboration	Willingness to collaborate with FLE teachers	11
Refocusing	Knowledge of enhancing Web 2.0 tools	13
*Self-Efficacy Belief	Web 2.0 tools Integration in ELT	22

**Statistically significant increase with large effect size, FG= Focus Group Interviews, II=Individual Interviews*

As could be seen from the above table, involving in LBD activities increased pre-service teachers' willingness to integrate Web 2.0 tools, knowledge of integrating Web 2.0 tools, awareness of the factors influencing the integration of Web 2.0 tools, awareness of the possible effects of Web 2.0 tools integration on themselves, awareness of the implementation process of using Web 2.0 tools, knowledge of designing lesson activity with Web 2.0 tools that can promote students' learnings and attitudes, knowledge of enhancing Web 2.0 tools, and technology integration self-efficacy beliefs.

CHAPTER 5

DISCUSSION

The purpose of the present study was to investigate Stages of Concern (SoC) and technology integration self-efficacy beliefs of English language pre-service teachers associated with the implementation of Learning Technology by Design (LBD) activities in the context of Instructional Principles and Methods course. To this end, an embedded quasi-experimental mixed methods design was carried out as the research design of the study. Firstly, the pre- and post-tests of SoCQ and technology integration self-efficacy belief surveys were administered before and after the LBD activities to measure English language pre-service teachers' concern stages and technology integration self-efficacy beliefs. Additionally, focus group interviews were carried out periodically throughout the interventions to understand the influence of LBD activities on pre-service teachers' SoC. Secondly, individual interviews were conducted to expand the quantitative results about concern stages and technology integration self-efficacy beliefs of English language pre-service teachers. The reason for collecting qualitative data was to provide support for the quantitative results.

According to the quantitative results of the present study, there were statistically significant differences in the Consequence concern stage and technology integration self-efficacy beliefs of English language pre-service teachers after the LBD activities were conducted; however, there were not significant differences in the other concern stages. The individual and focus group interviews were also analyzed to provide explanations for the quantitative results. Furthermore, group percentile scores were

calculated to assess the intensity and diversity of concern stages within the group. Results of the present study will be discussed under two titles: Stages of Concern and technology integration self-efficacy belief.

5.1 Stages of Concern

The results of the paired sample t-test provided evidence that there was a substantial difference in the Consequence concern stage of English language pre-service teachers. On the other hand, the other six concern stages -- Unconcerned, Informational, Personal, Management, Collaboration and Refocusing -- did not change significantly.

5.1.1 Stage 0 – Unconcerned

Regarding the Unconcerned stage, the result of the paired sample t-test indicated that there was not a statistically significant difference. Besides, the most intense concern stage of pre-service teachers is the Unconcerned stage when considering the group percentile scores from Figure 4.1. George, Hall and Stiegelbauer (2006) stated that individuals have little interest or involvement in technological innovation at this stage and they might be more concerned about other things, innovations or activities. Therefore, it might be concluded that pre-service teachers experience the Unconcerned stage intensely in regard to integrating Web 2.0 tools in ELT classes whether they were exposed to LBD activities or not.

The findings revealed that there might be basically two reasons behind this concern stage. First, pre-service teachers stated that they prioritized exams and assignments of their major field, therefore; they did not have enough time to involve themselves in Web 2.0 tools. Second, pre-service teachers stated that they were unconcerned with Web 2.0 tools because they do not like using technologies. Accordingly, statistically significant mean differences between pre- and post-test scores of the Unconcerned stage could not be found and its intensity remained the highest before and after the LBD activities were conducted.

Toms (1997) stated that the peak stages of concern are related to the engagement of individuals with the innovation. In that regard, it could be concluded for the present study that peak Unconcerned stage of English language pre-service teachers might stem from the implementations which are carried out during pre-service teacher

education. In other words, it could be stated that pre-service teachers engage in technologies only in the context of a couple of courses rather than involving them throughout the curriculum. In the present study, pre-service teachers are in their second-year and they only engaged in Web 2.0 tools in the scope of the one course and the course in which LBD activities were conducted. It can be said that technology integration activities are not carried out across the curriculum in the college of education. At this juncture, Casey and Rakes (2002) emphasized the importance of implementing instructional technology as a continuous and long-term program rather than implementing it as "one-shot" program. Bax (2003) stated that technologies should be a part of every lesson like pen and paper without being the center of the lessons. Similarly, Hall and Hord (2014) posited that "*change is a process, not an event*" (p. 10). In this direction, pre-service teachers may consider technology integration to be separate from their primary pedagogical focus and thus indicate a high level of Unconcern toward the idea.

Yang and Huang (2008) noted that considerable exposure to an innovation reduces the intensity of the Unconcerned stage. Therefore, by disseminating the usage of technology across the curriculum in the college of education, pre-service teachers may consider the Web 2.0 tools as a part of their life and education, as a consequence, begin to engage with using Web 2.0 tools.

5.1.2 Stage 1 – Informational

Regarding the Informational stage, the result of the paired sample t-test revealed that there was not a statistically significant difference. In terms of group percentile scores as seen from Figure 4.1, the Informational concern of pre-service teachers is the second highest concern stage along with the Personal concern stage. Although there was a decrease in post-test scores, it was not statistically significant. George, Hall and Stiegelbauer (2006) pointed out that individuals indicate general awareness and are interested in learning more details about the innovation in this stage. Hollingshead (2009) also stated that individuals in the Informational stage demand to learn more about the innovations.

The findings revealed that pre-service teachers are knowledgeable about the possibility of using Web 2.0 tools and the requirements to integrate them into ELT classes.

Furthermore, pre-service teachers pointed out in the focus group interviews that LBD activities helped them learn and promote their awareness of using Web 2.0 tools. In that regard, this finding is consistent with the current literature of LBD, which suggested that LBD might provide learning activities in which pre-service teachers could improve their technology integration knowledge and skills (Koehler and Mishra, 2005; Alayyar, 2011; Johnson, 2012).

Despite the findings that pre-service teachers are fairly knowledgeable about technology integration, they are still willing to learn more about the Web 2.0 tools because they want to be able to fulfill the needs of the digital era that were expressed by pre-service teachers in the interviews. Prensky (2001) pointed out that today's students are much different than students of the past and they spend a majority of their time using digital tools. Accordingly, Jonassen, Howland, Marra and Crismond (2008) argued that today's students needed to be engaged in instructional activities by exploring, collaborating and reflecting on their learning. Since the digital technologies, especially Web 2.0 tools, provide these opportunities (Johnston and Cooley, 2001; O'Reilly, 2005; Richardson, 2006; Selwyn, 2008), pre-service teachers might believe that they needed to make themselves more technologically savvy and learn more about Web 2.0 tools. Therefore, it could be concluded from the results that the pre-service teachers asked for more information about Web 2.0 tools after the LBD activities that the Information concern stage of pre-service teachers did not change significantly and its intensity remained same.

5.1.3 Stage 2 – Personal

Regarding the Personal stage, the result of the paired sample t-test indicated that there was not a statistically significant difference. In terms of group percentile scores, it can be seen from Figure 4.1 that Personal concern is the second highest stage along with Informational concern after the Unconcerned stage and the intensity of Personal concerns remained almost the same after the LBD activities were conducted. George, Hall and Stiegelbauer (2006) explained that individuals are not certain about the demands of an innovation and their adequacies to fulfill the demands and are more concerned about their role related to the usage of innovation. Furthermore, individuals consider their capabilities, the effects of the innovation on their profession, role, and

the time and energy commitment required for using the innovation. Since there is no significant change in Personal stage, it might be inferred that pre-service teachers can still have self-doubts about the effects of integrating Web 2.0 tools on themselves. Furthermore, having Personal concerns might be an indication of efficacy issues (Clinton, 2011; Hall and Hord, 2014).

According to the findings, pre-service teachers pointed out that LBD activities helped them acquire knowledge of designing technology integrated lesson activities and noticing the possible effects of using Web 2.0 tools on themselves. Furthermore, pre-service teachers stated that using Web 2.0 tools for instructions could change the roles of a teacher from the authority of the classroom to the facilitator, affect the professional status positively, and reduce the time and energy commitment of a teacher.

Besides, pre-service teachers also stressed the importance of teaching experience. Many pre-service teachers said that they did not practice their technology integrated lesson plans and see themselves in a real classroom environment, therefore; they were not certain of the influences of Web 2.0 tools on themselves. At this point, Borgerding, Sadler, and Koroly (2013) stated that novice individuals are more concerned about the innovation effects on themselves compared to individuals who are more experienced with technology. Considering the pre-service teachers' lack of teaching experience, it could be inferred that the intensity of Personal stage did not change significantly. In this direction, Al-rawajfih, Fook, Idros (2010) noted that the development of concerns depends on the history of past successful experiences of individuals. Similarly, Joffrion (2014) also pointed out that concern stages had a significant relationship with the teaching experience of individuals. Therefore, it could be critical to provide opportunities for pre-service teachers to gain successful teaching experiences in their pre-service years.

5.1.4 Stage 3 – Management

Regarding the Management stage, the result of the paired sample t-test indicated that there was not a statistically significant difference in intensity level as a result of the LBD activities. In terms of group percentile scores as seen from Figure 4.1, pre-service teachers have medium intensity in this stage. George, Hall, and Stiegelbauer (2006) pointed out that individuals consider the time, logistics or other managerial problems

in the Management stage. Moreover, they stated that individuals focus on issues related to managing, organizing and efficiency.

Although some PSTs stated in the interviews that they gained practical ideas in LBD activities about the implementation process of Web 2.0 tools in ELT, they pointed out the difficulties of managing classroom and organizing students when using Web 2.0 tools in the classroom. Furthermore, they said that it could be challenging for them since the attentions of students might be distracted easily in the internet environment.

There are research studies in the literature which note that the implementation experience of individuals has an impact on the Management concern stage (Çetinkaya, 2012; Shoulders and Myers, 2011). Hall, George, and Rutherford (1977) stated that the concerns of individuals depend on the implementation experience of individuals. Hall (1985) emphasized the importance of experience on the resolution of concern stages. Hope (1997) pointed out that it might be critical to provide opportunities for individuals to experience and perform the innovations as a way of resolving their concerns. Çetinkaya (2012) noted that having an opportunity to implement the innovations could change Management concern stages. Similarly, Rogers (2003) asserted that individuals need to implement the innovation and confirm the consequences of implementation results before they feel comfortable adopting the innovation into their classroom. The intensity of Management concerns thus might remain the same since the pre-service teachers could not implement their technology integrated lesson plans in a real classroom environment in the context of LBD activities. Charalambous and Philippou (2010) suggested that individuals need support to overcome their Management concerns if they are going to see value in the new way. Therefore, providing opportunities for pre-service teachers and supporting them to have successful experiences might result in a change their Management concerns.

5.1.5 Stage 4 – Consequence

Regarding the Consequence stage, the result of the paired sample t-test indicated that there was a statistically significant difference. Furthermore, the eta squared value revealed that there was a large effect size, which indicates substantial differences between pre- and post-scores of pre-service teachers in terms of Consequence stage. Although this stage was the lowest intensity at first as seen from Figure 4.1, it

substantially increased after the LBD activities. George, Hall and Stiegelbauer (2006) pointed out that individuals focus on the impact of innovation on students during the consequence concern stage. In other words, they consider the outcomes, performances, and competencies of students gained as a result of the implementation of the innovation.

According to the findings, pre-service teachers expressed that integrating Web 2.0 tools could affect the attitudes of students positively and have a positive impact on their learning. The pre-service teachers felt that Web 2.0 tools were likely to attract the students' attention and that they provided various opportunities for students to actively participate in the process of learning. Moreover, pre-service teachers pointed out that LBD activities helped them learn to design technology integrated lesson activities that promoted the learning and attitudes of students. In this direction, Han and Bhattacharya (2001) reported that LBD activities emphasize the processes and outcomes of learning. Fessakis, Tatsis and Dimitracopoulou (2008) noted that LBD activities could support teachers so that they can offer appropriate learning experiences for their students. Kayaduman and Delialioglu (2016) also investigated the effects of LBD activities on the concern changes of English language pre-service teachers and found that LBD activities increase the intensity of Consequence concern stages of pre-service teachers. In that regard, it might be said that this finding of the present study is consistent with the current literature. Newlove and Hall (1976) stated that individual's concerns develop toward impact concerns with the acquisition of new knowledge and skills. Therefore, it could be concluded that involving LBD activities can help pre-service teacher acquire Web 2.0 tools integration knowledge and skills, and accordingly, result in a significant change on their Consequence concerns.

5.1.6 Stage 5 – Collaboration

Regarding the Collaboration stage, the result of the paired sample t-test indicated that there was not a statistically significant difference between pre- and post-test scores of pre-service teachers. As seen from Figure 4.1, Collaboration stage is the lowest intensity concern and remains almost the same after the LBD activities were completed. George, Hall and Stiegelbauer (2006) stated that individuals ask to collaborate with others about the usage of innovation in this stage.

According to the findings, pre-service teachers expressed that they could collaborate with other English language teachers since they teach the same content. On the contrary, they did not want to collaborate with teachers from other fields because they considered the content they teach to be significantly different from other fields. Since the intensity of Collaboration stage is the lowest after the LBD activities, it could be stated that pre-service teachers do not intensely concern themselves with collaborating with others to integrate Web 2.0 tools into ELT classes.

Hall and Hord (2014) pointed out that encouraging individuals to collaborate with each other could address their Collaboration concerns. Although the pre-service teachers engaged in collaboration activities by designing lesson plans and giving peer feedback, these activities did not result in a significant change on their Collaboration concerns. This might be due to pre-service teachers' implementation experiences. Considering the importance of implementation experience on the development of concern stages (Hall, George, and Rutherford, 1977), pre-service teachers in the present study could be regarded as inexperienced since they did not have real experiences integrating Web 2.0 tools into ELT classes. Therefore, providing appropriate opportunities for pre-service teachers to implement their technology integrated lesson plans and encouraging them to collaborate with others might increase the intensity of Collaboration concerns.

5.1.7 Stage 6 – Refocusing

Regarding the Refocusing stage, the result of the paired sample t-test revealed that there was not a statistically significant mean difference between pre- and post-test scores of Refocusing stage. As seen from Figure 4.1, the intensity of the Refocusing stage remained almost the same, explaining the non-significant result of a paired sample t-test and tailed up before and after the LBD activities. George, Hall and Stiegelbauer (2006) pointed out that tailing up of this concern stage indicates that individuals could have opinions either to enhance the innovation or to replace it with an alternative one. Furthermore, they stated that tailing up of the Refocusing stage might be an indication of resistance toward using the innovation.

The findings indicated that pre-service teachers considered enhancing the current Web 2.0 tools by eliminating the limitations and developing new Web 2.0 tools which will

especially help learners improve their speaking skills. Additionally, pre-service teachers expressed that they could integrate Web 2.0 tools into their future classrooms if the necessary conditions were satisfactory for them. Therefore, it could be concluded in the present study that the tailing up of the Refocusing stage is related to the enhancement and development of new Web 2.0 tools rather than resistance or replacement. Although it may have been an indication of resistance at first, the pre-service teacher interviews revealed that the tailing up after the LBD activities point to a desire for enhancement rather than a resistance to implementation.

In that regard, this finding of the present study is not consistent with the current literature which explains tailing up of the Refocusing stage as resistance toward using an innovation (Myers, Barrick and Samy, 2012; George, Hall and Stiegelbauer, 2006; Hall and Hord, 2001). Considerations of pre-service teachers about the enhancement and development of Web 2.0 tools might be related to LBD activities. In the scope of the LBD activities as summarized in *Table **3.1***, pre-service teachers explored the potential of Web 2.0 tools and determined their limitations. Hence, it could be inferred that pre-service teachers asked for enhancement and development of Web 2.0 tools in regard to their limitations. In addition, as aforementioned, pre-service teachers expressed in the interviews that Web 2.0 tools could positively affect the professional status of a teacher, learning and attitudes of students, efficiency of instructional activities, and reduce the time and energy commitment of a teacher. Therefore, it can be concluded that they have positive attitudes toward integrating Web 2.0 tools into ELT classes which may lead to future usage.

5.1.8 Group Percentile Scores

Interpreting the overall group percentile scores of pre-service teachers provides many clues about their concerns (George, Hall and Stiegelbauer, 2006). As seen from Figure 4.1, the predominant concern stages relate to self-concerns (Unconcerned, Informational, and Personal) before and after the LBD activities were carried out.

Hall and Hord (2014) noted that individuals generally have high self-concerns and low task and impact concerns at the early phase of an innovation. When individuals become experienced in the adoption process, their intense concerns change from self to task and impact concerns. In that regard, it could be pointed out that pre-service

teachers have a typical inexperienced user profile and are personally more involved in the self-concerns than the task and impact concerns, since they are not yet in-service and do not have implementation experiences with Web 2.0 tools. This indicates that the group profiles of pre-service teachers are consistent with the SoC model. In the present study, although LBD activities in the context of the Instructional Principles and Methods course significantly contributed to one of the impact concerns, the Consequence stage, the intensity of self-concerns remained high. Al-rawajfih, Fook, Idros (2010) noted that a persisting levels high of self-concern may result in quitting the use of innovation. Similarly, Dunn and Rakes (2010) stated that having intense self-concerns may lead to discontinued use of innovations. In that regard, pre-service teachers may stop using Web 2.0 tools in the future due to having intense self-concerns, despite expressing their willingness to integrate Web 2.0 tools in their future classrooms. At this point, Lochner (2014) pointed out that individuals having concerns in different stages need different types of support depending on their concern stages. Therefore, it could be more important to help pre-service teachers resolve issues related to self-concerns, which are determined in the present study to arouse higher level concerns.

5.2 Technology Integration Self-Efficacy Belief

The result of the paired sample t-test indicated that there was a statistically significant difference regarding technology integration self-efficacy beliefs of pre-service teachers. The Eta squared value revealed that there was a large effect size, which indicates a substantial increase from pre-test to post-test scores of technology integration self-efficacy beliefs of pre-service teachers.

According to the findings, the majority of pre-service teachers expressed that they have self-efficacy to integrate Web 2.0 tools into ELT classes. They also pointed out that they feel confident to evaluate their students with the help of Web 2.0 tools and to help their students if they need assistance using Web 2.0 tools.

Bandura (1977) described four critical sources of information which help to develop the self-efficacies of people. These are: performance accomplishment, vicarious experiences, verbal persuasion and emotional arousal. In the scope of LBD activities, pre-service teachers engaged in design challenges to give them experience creating

technology-integrated lesson plans. Because this design challenges provided mastery experiences for pre-service teachers, it could be considered as a performance accomplishment. In addition, pre-service teachers also engaged in collaboration activities within the scope of LBD activities. In this process, they had opportunities to see and provide feedback on other pre-service teachers' technology integrated lesson plans. Since the pre-service teachers learned from each other by collaborating with one another, this contributed to the vicarious experiences of pre-service teachers. Namely, pre-service teachers experienced the two sources of self-efficacy belief for technology integration, which are performance accomplishment and vicarious experiences. Accordingly, it could be concluded that pre-service teachers' technology integration self-efficacy beliefs increased substantially.

In the literature, there are several research studies which point out that LBD activities have the potential to contribute to pre-service teachers' understanding of technology integration, facilitate an attitudinal change toward technology usage, and improve technology integration skills (Mishra and Koehler, 2006; Alayyar, 2011; Johnson, 2012; Lee and Lee, 2014). In that regard, this result supports the previous research studies and emphasizes the potential effects of LBD activities on technology integration abilities of pre-service teachers. Therefore, involving pre-service teachers in LDB activities could be a beneficial way to enhance their technology integration self-efficacy beliefs.

On the other hand, the present study illustrated a critical element to the extant literature about self-efficacy beliefs and concerns. Previous research studies indicated that self-efficacy beliefs of individuals have an impact on the concerns of individuals (Dunn and Rakes, 2010; Charalambous and Philippou, 2010; McKinney, Sexton, and Meyerson, 1999; Ghaith and Shabaan, 1999). However, the findings of the present study revealed that enhanced technology integration self-efficacy belief might not always result in arousal and resolution of the seven stages of concerns. In the present study, only the Consequence concerns of pre-service teachers increased significantly, while other stages remained the same. At this point, Wang, Ertmer, and Newby (2004) stated that enhanced self-efficacy beliefs do not guarantee the use of technologies. In that regard, it could be more important to consider their concerns in order to ensure the successful, lasting integration of technology into the classroom. Ghaith and

Shabaan (1999) pointed out that considering the concerns of pre-service teachers has an impact on their sense of self-efficacy and subsequently, increases the chances of successful implementation. Therefore, involving pre-service teachers in LBD activities which enhance their technology integration self-efficacy beliefs and helps to ameliorate concerns emerging during the integration process could be an effective way to ensure the successful implementation of Web 2.0 tools for future ELT classes.

5.3 Conclusion

Considering all information about stages of concern and technology integration self-efficacy beliefs of pre-service teachers, it could be inferred that aligning the goals and objectives of Instructional Principles and Methods Course with Learning Technology by Design activities were beneficial in many ways. Pre-service teachers engage in this process increased their technology integration knowledge and skills. Moreover, the pre-service teachers who are engaged in LBD activities in the context of Instructional Principles and Methods Course can increase their

- willingness to integrate Web 2.0 tools,
- knowledge of integrating Web 2.0 tools,
- awareness of the factors influencing the integration of Web 2.0 tools,
- awareness of the possible effects of Web 2.0 tools integration on themselves,
- awareness of the implementation process of using Web 2.0 tools,
- knowledge of designing lesson activity with Web 2.0 tools that can promote students' learnings and attitudes,
- knowledge of enhancing Web 2.0 tools, and
- technology integration self-efficacy beliefs.

On the other hand, the present study revealed important elements about self-efficacy beliefs and concerns of English language pre-service teachers. Firstly, the findings indicated that pe-service teachers consider technology integration to be separate from their primary pedagogical focus and thus indicate a high level of Unconcern toward the idea. Since considerable exposure to an innovation reduces the intensity of the Unconcerned stage (Yang and Huang, 2008), disseminating the usage of technology integration across the curriculum in the college of education can help pre-service

teachers consider the Web 2.0 tools as a part of their life and education. Secondly, the findings indicated pre-service teachers could not confirm the consequences of their actions about the technology integrated lesson activities that they designed in the context of the present study; hence, are not certain of the effects of Web 2.0 tools integration on themselves. Since the development of concerns depends on the history of past successful experiences of individuals (Al-rawajfih, Fook, Idros, 2010), it could be critical to provide opportunities for pre-service teachers to gain successful teaching experiences in their pre-service years. Lastly, the findings indicated that enhanced self-efficacy belief might not always result in changing SoC. Since enhanced self-efficacy beliefs do not guarantee the use of technologies (Wang, Ertmer, and Newby, 2004), it might be important to consider the reasons behind concern stages to ensure the successful, lasting technology integration.

5.3.1 Practical Recommendations

In the present study, aligning the goals and objectives of Instructional Principles and Methods Course with LBD activities were beneficial in many ways as stated in conclusion. In this direction, in order to prepare similar interventions and programs along with the LBD activities, the following statements that were carried out in the current study could be taken into account to contribute to the understandings of pre-service teachers for technology integration.

- The course content should include the foundations of instruction, principles of effective learning and teaching, instructional methods, strategies, and planning; and develop understandings about content organization, choosing appropriate instructional methods and strategies, selection of materials and analyzing their properties, and measurement and evaluation.
- The course and its activities should take at least a semester in order to develop the knowledge and skills of pre-service teachers for technology integration.
- The Learning Technology by Design (LBD) activities should be aligned with these course goals and objectives. Each week course topic should be reinforced with LBD activities.

- Web 2.0 tools to be used for design activities should be useful, effective and efficient so that pre-service teachers can see the relative advantage (Rogers, 2003) of technologies.
- The pre-service teachers should fulfill the LBD activities by exploring, designing, revising and reflecting. They should collaboratively work on design activities related to the topic of the week.
- Providing feedback related to the design activities is critical in order to develop technology integration self-efficacy beliefs and to promote higher concern stages.

Despite the statements expressed above, there are some critical points could be considered for more successful implementations. In the scope of the current study,

- the professor of the course and the researcher determined the Web 2.0 tools for design activities. In addition to the most used Web 2.0 tools in English Language Teaching (ELT) literature, the criteria for choosing Web 2.0 tools was their usefulness, effectiveness, efficiencies, and ease of use. Although the pre-service teachers enjoyed to engage with many of the Web 2.0 tools, they did not like some of the Web 2.0 tools. As a consequence, they become unconcerned toward these Web 2.0 tools. Besides, some of the pre-service teachers expressed that they were not interested in using technologies. Therefore, it could be critical to determine Web 2.0 tools to be used for design activities by getting the opinions of pre-service teachers. In this way, pre-service teachers can be more inclined toward the integration of Web 2.0 tool and become more engaged in design activities.
- pre-service teachers explored the affordances and limitations of Web 2.0 tools and stated the factors influencing the integration of Web 2.0 tools in ELT. Although they increased their knowledge, they were lack of gaining deeper insights about the possibilities of using Web 2.0 in ELT. Most of the pre-service teachers stated the same affordances and limitations over time. Therefore, it could be more valuable to let them observe real settings in which Web 2.0 tools are integrated to facilitate the teaching and learning process. In this way, pre-service teachers might be more sophisticated while exploring the

affordances and limitations of Web 2.0 tools and stating the factors influencing the integration of Web 2.0 tools in ELT. In addition to that, they can also develop their self-efficacies from vicarious experiences (Bandura, 1977, p.197) by observing other people and seeing their performance accomplishments.

- pre-service teachers involved in course activities by exploring, designing, revising and reflecting. However, they did not implement their technology integrated lesson plans in a real setting and see the effects for themselves. Accordingly, pre-service teachers said that they were not certain of managing classroom and organizing students, and the effects of Web 2.0 tools on themselves. Hence, their Personal and Management concerns remained static. Therefore, providing opportunities for pre-service teachers to perform their design activities would provide them with successful experiences; thus positively impacting their Personal and Management concerns and increasing the chance of sustaining their course of actions for the future implementations.
- pre-service teachers made peer review on each other's lesson plans in addition to designing these plans collaboratively. Most of the pre-service teachers found this process very beneficial since they were able to realize their missing points in their lesson plans and see different design activities to be used in ELT. On the other hand, there were some challenges that need to be considered for the future implementations. The pre-service teachers said that they were not certain of the feedbacks since the peers were not expert and some of them were not objective during the assessment. Therefore, providing a rubric and making review blindly could increase the impact of peer reviewing sessions.

As a result, it could be pointed out that using LBD as an instructional approach and supporting it with the recommendations aforementioned for the future interventions and strategies could be an effective way for sustained and successful technology integration.

5.4 The Implications of the Study

The findings of present study contributed to and provided recommendations related to the current understanding of components involved in technology integration. The

knowledge gained from the present study might contribute to the development of new strategies and interventions which are necessary for the successful integration of technology in education. The findings of this study emphasized the importance of English language pre-service teachers' concerns in regard to integrating Web 2.0 tools into English language teaching. Hence, there are several implications of the present study in terms of teacher educators, faculty members, instructional designers, program developers, educational planners and policy makers.

The findings of the present study indicated that implementing LBD approach along with the "Instructional Principles and Methods" course in the department of Foreign Language Education was valuable in terms of many aspects. In LBD, students are supposed to work collaboratively to learn the content by exploring, designing, revising and reflecting (Kolodner, 2002). Research studies indicated that LBD has an impact on technology integration skills (Mishra and Koehler, 2006; Alayyar, 2011; Johnson, 2012; Lee and Lee, 2014). Likewise, the findings of the present study also supported the contention that LBD is influential on the technology integration process. Pre-service teachers who were involved in LBD increased the intensity of their Consequence concern and technology integration self-efficacy beliefs. In other words, pre-service teachers became more interested in the attitudes and learning of students and more confident about integrating Web 2.0 tools into ELT classes. Moreover, pre-service teachers suggested useful ideas about the enhancement and development of Web 2.0 tools as a consequence of their involvement in LBD. Through their exploration of Web 2.0 tools, pre-service teachers were not only able to discover the benefits of Web 2.0 tools, but also their limitations.

The present study also contends that it is especially critical for pre-service teachers to be exposed to the use of Web 2.0 tools throughout the curriculum in the college of education. Considering technology integration as a long-term process (Casey and Rakes, 2002; Hall and Hord, 2014), it would be better to engage pre-service teachers in Web 2.0 tools throughout their education since they see the technology integration different from their major field in the present study. In this direction, integrating different kinds of Web 2.0 tools into the courses throughout the curriculum and encouraging pre-service teachers to use these tools might reduce the intensity of the Unconcerned and Informational stages. By doing so, pre-service teachers might

consider Web 2.0 tools and technology integration as a part of their education and life, and consequently be more invested in learning and using Web 2.0 tools.

All in all, the present study provides valuable information for faculty members, policy makers, program developers, educational planners and researchers who are concerned about the successful and sustained integration of technology in education. Specifically, the findings of this study have important implications for better understanding the concerns of pre-service teachers who considering integrating Web 2.0 tools into ELT classes. Addressing these concerns to constitute interventions and strategies can lead to and promote the pre-service teachers' usage of technological tools and, accordingly; yield more widespread and impactful integration of technology in education at large.

5.5 Recommendations for Further Research

The present study examined SoC and technology integration self-efficacy beliefs of English language pre-service teachers toward integrating Web 2.0 tools into English Language Teaching classes in the context of LBD activities. Although the present study provided rich data and answered the research questions at hand, further research studies are needed to gain a greater understanding of the process. The following recommendations are suggested for additional research studies:

- The present study was integrated into the "Instructional Principles and Methods" course in the department of Foreign Language Education. The participants in this study included second grade English language pre-service teachers and the majority of them (92%) were female students. Accordingly, the findings of the present study are limited by the characteristics of participants and attributions of major and course. In that regard, including participants from different backgrounds and majors is required for further research studies in order to extend the findings of the present study.
- In the present study, six different Web 2.0 tools were integrated into the course activities in order to understand the concerns of pre-service teachers in detail rather than focusing on only a single Web 2.0 tool. Since the features of an innovation are highly influenced by the concerns of individuals (Hall and Hord, 2014; George, Hall and Stiegelbauer, 2006), further research studies should

utilize contrasting Web 2.0 tools or different innovations and compare the results with the present study in order to see the development of concerns.

- Although pre-service teachers in the present study engaged in design activities throughout the semester, they were not able to implement their technology integrated plans and activities in a real classroom environment. The development of their concerns and self-efficacy beliefs might be different if they could have a chance to see themselves in a real classroom. Accordingly, further research should provide opportunities for pre-service teachers to implement technology integrated plans and investigate their SoC and self-efficacy development.
- The qualitative findings of the present study recommended many valuable implications for further research studies. These findings revealed the reasons behind the self, task and impact concerns of English language pre-service teachers. Considering these reasons for further research might expand the perspective of CBAM as a technology adoption process.
- In the present study, an embedded quasi-experimental mixed methods research design was carried out with 24 English language pre-service teachers to answer the research questions of the study. Since there was a single group in the present study, establishing different experimental designs with the control group and larger sample sizes are required for further research in order to compare results. In addition, including different variables which are more related to the concerns of individuals like personal traits, motivation, attitudes in experimental studies might be beneficial to gain a better understanding about the process.
- Although the present study provided both qualitative and quantitative data, there is still a need to conduct further research studies carrying out different research methodologies. Conducting different research methods especially correlational and observational studies might be very helpful in order to determine the concerns of pre-service teachers in the process of technology adoption.
- Further research studies are also required to determine the development of SoC of in-service teachers about their technology adoption process by carrying out similar research methodologies in order to be able to develop more pertinent interventions and programs to facilitate their adoption process.

5.6 Limitations of the Study

As in the other studies, the present study also has its limitations. First, the instruments utilized in this study were self-report instruments. In other words, the data collected in the present study were limited by the responses of participants. Second, the instrument of SoCQ has seven subscales. Although the reliability of six subscale matches the minimum criteria of being above 0.70 (Büyüköztürk, 2009), the first subscale, Stage 0, does not fulfill this requirement. Therefore, the results of this stage are limited to the reliability of this subscale. Third, the present study is limited by participant group who attended the course of "Instructional Principles and Methods" during Spring 2015. Additionally, a total number of 24 surveys formed a small sample size. Hence, the findings of the study should cautiously be interpreted. Lastly, the present study was designed as a quasi-experimental method, which had no control group in the study. Despite the efforts of the establishment of a control group, data could not be collected. Therefore, the control group should be established in future research studies in order to compare the results.

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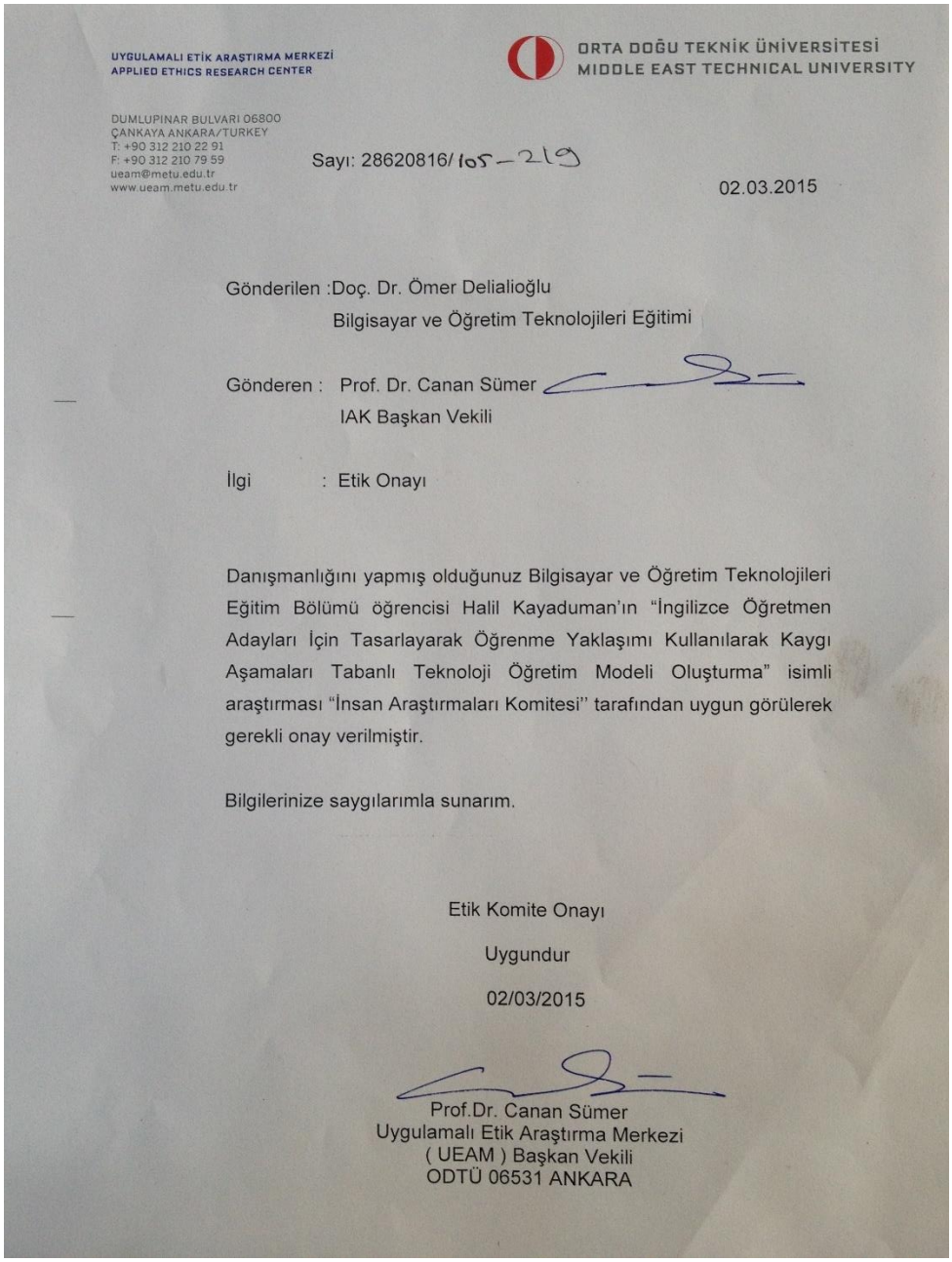
APPENDIX A

IBR APPROVAL FROM MIDDLE EAST TECHNICAL UNIVERSITY



UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

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02.03.2015

Gönderilen :Doç. Dr. Ömer Delialioğlu
Bilgisayar ve Öğretim Teknolojileri Eğitimi

Gönderen : Prof. Dr. Canan Sümer
IAK Başkan Vekili

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz Bilgisayar ve Öğretim Teknolojileri Eğitim Bölümü öğrencisi Halil Kayaduman'ın "İngilizce Öğretmen Adayları İçin Tasarlayarak Öğrenme Yaklaşımı Kullanılarak Kaygı Aşamaları Tabanlı Teknoloji Öğretim Modeli Oluşturma" isimli araştırması "İnsan Araştırmaları Komitesi" tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı

Uygundur

02/03/2015

Prof.Dr. Canan Sümer
Uygulamalı Etik Araştırma Merkezi
(UEAM) Başkan Vekili
ODTÜ 06531 ANKARA

APPENDIX B

INFORMED CONSENT

Bu çalışma, Orta Doğu Teknik Üniversitesi Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü doktora öğrencisi Halil KAYADUMAN tarafından doktora tezi kapsamında yürütülen bir çalışmadır. Çalışmanın amacı, eğitimde teknolojinin etkili kullanımını artırabilmek amacıyla; İngilizce öğretmen adaylarının Web 2.0 araçlarının İngilizce öğretiminde kullanımına dönük kaygı aşamalarının ve teknoloji entegrasyonu özyeterlililklerini araştırılmasıdır. Çalışmaya katılım tamamıyla gönüllülük temelinde olmalıdır. Çalışma da ölçeklere ve görüşmelere verdiğiniz cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir; elde edilecek bilgiler bilimsel yayımlarda kullanılacaktır.

Çalışma sırasında doldurulması talep edilecek ölçeklerde, genel olarak kişisel rahatsızlık verecek herhangi bir ayrıntı içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz çalışmayı yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda çalışmada sorumlu kişiye, çalışmadan ayrılmak istediğinizi söylemeniz yeterli olacaktır. Çalışmanın veri toplama aşamasının sonunda, bu çalışmayla ilgili sorularınız cevaplanacaktır. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü öğrencilerinden Halil KAYADUMAN (Tel: +90 312 2107523; E-posta: halilk@metu.edu.tr) ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

Adı-Soyadı :

Tarih : ----/----/-----

İmza :

APPENDIX C

STAGES OF CONCERN QUESTIONNAIRE

Name: _____

E-mail address: _____

The purpose of this questionnaire is to determine **present** concerns of English language pre-service teachers toward **using Web 2.0 tools (Blogs, Wiki, Forum or etc.) in English language teaching**.

This statement is very true of me at this time.	0 1 2 3 4 5 6 (7)
This statement is somewhat true of me now.	0 1 2 3 (4) 5 6 7
This statement is not at all true of me at this time.	0 (1) 2 3 4 5 6 7
This statement seems irrelevant to me.	(0) 1 2 3 4 5 6 7

Please respond to the items in terms of **your present concerns,** or how you feel about your involvement with Web 2.0 tools.

Please complete the following:

How long have you been involved with Web 2.0 tools, not counting this year?
Never ___ 1 year ___ 2 years ___ 3 years ___ 4 years ___ 5 years or more ____

2. In your use of Web 2.0 tools, do you consider yourself to be a:
non-user ___ novice ___ intermediate ___ old hand ___ past user ____

3. Have you received formal training regarding Web 2.0 tools (workshops, courses)?
Yes ____ No ____

4. Are you currently in the first or second year of use of some major technological tools other than this one?
Yes ____ No ____

If yes, please describe briefly:

_____

0	1 2	3 4 5	6 7
Irrelevant	Not true of me now	Somewhat true of me now	Very true of me now

1. I am concerned about students' attitudes toward Web 2.0 tools.	0 1 2 3 4 5 6 7
2. I now know of some other approaches that might work better.	0 1 2 3 4 5 6 7
3. I am more concerned about another technological tool.	0 1 2 3 4 5 6 7
4. I am concerned about not having enough time to organize myself each day.	0 1 2 3 4 5 6 7
5. I would like to help other faculty in their use of the Web 2.0 tools.	0 1 2 3 4 5 6 7
6. I have a very limited knowledge of Web 2.0 tools.	0 1 2 3 4 5 6 7
7. I would like to know the effect of Web 2.0 tools on my professional status.	0 1 2 3 4 5 6 7
8. I am concerned about conflict between my interests and my responsibilities.	0 1 2 3 4 5 6 7
9. I am concerned about revising my use of the Web 2.0 tools.	0 1 2 3 4 5 6 7
10. I would like to develop working relationships with both our faculty and outside faculty using Web 2.0 tools.	0 1 2 3 4 5 6 7
11. I am concerned about how Web 2.0 tools affect students.	0 1 2 3 4 5 6 7
12. I am not concerned about Web 2.0 tools at this time.	0 1 2 3 4 5 6 7
13. I would like to know who will make the decisions in the new system.	0 1 2 3 4 5 6 7
14. I would like to discuss the possibility of using Web 2.0 tools.	0 1 2 3 4 5 6 7
15. I would like to know what resources are available if we decide to adopt Web 2.0 tools.	0 1 2 3 4 5 6 7
16. I am concerned about my inability to manage all that Web 2.0 tools require.	0 1 2 3 4 5 6 7
17. I would like to know how my teaching or administration is supposed to change.	0 1 2 3 4 5 6 7
18. I would like to familiarize other departments or persons with the progress of this new approach.	0 1 2 3 4 5 6 7

0	1 2	3 4 5	6 7
Irrelevant	Not true of me now	Somewhat true of me now	Very true of me now

19. I am concerned about evaluating my impact on students.	0 1 2 3 4 5 6 7
20. I would like to revise Web 2.0 tools' approach.	0 1 2 3 4 5 6 7
21. I am preoccupied with things other than Web 2.0 tools.	0 1 2 3 4 5 6 7
22. I would like to modify our use of Web 2.0 tools based on the experiences of our students.	0 1 2 3 4 5 6 7
23. I spend little time thinking about Web 2.0 tools.	0 1 2 3 4 5 6 7
24. I would like to excite my students about their part in this approach.	0 1 2 3 4 5 6 7
25. I am concerned about time spent working with nonacademic problems related to Web 2.0 tools.	0 1 2 3 4 5 6 7
26. I would like to know what the use of Web 2.0 tools will require in the immediate future.	0 1 2 3 4 5 6 7
27. I would like to coordinate my efforts with others to maximize Web 2.0 tools' effects.	0 1 2 3 4 5 6 7
28. I would like to have more information on time and energy commitments required by Web 2.0 tools.	0 1 2 3 4 5 6 7
29. I would like to know what other faculty are doing in this area.	0 1 2 3 4 5 6 7
30. Currently, other priorities prevent me from focusing my attention on Web 2.0 tools.	0 1 2 3 4 5 6 7
31. I would like to determine how to supplement, enhance, or replace Web 2.0 tools.	0 1 2 3 4 5 6 7
32. I would like to use feedback from students to change the program.	0 1 2 3 4 5 6 7
33. I would like to know how my role will change when I am using Web 2.0 tools.	0 1 2 3 4 5 6 7
34. Coordination of tasks and people is taking too much of my time.	0 1 2 3 4 5 6 7
35. I would like to know how Web 2.0 tools is better than what we have now.	0 1 2 3 4 5 6 7

APPENDIX D

PERMISSION FOR STAGES OF CONCERN QUESTIONNAIRE

Gmail

Halil Kayaduman <halilkayaduman@gmail.com>

Permisson to use Stages of Concern Questionnnarie

Gene Hall <gene.hall@unlv.edu>
To: Halil Kayaduman <halilkayaduman@gmail.com>

Hello Hafil: Thank you for the email. As long as you do not change the wording of the 35 items, you have my permission to use the Stages of Concern Questionnaire in your dissertation study. Please be sure to refer to the technical manual and also site the book *Implementing Change* as the basic sources.

George, A.A., Hall, G.E., & Stiegelbauer, S.M. (2006). *Measuring Implementation in Schools: The Stages of Concern Questionnaire.* Austin, TX: Southwest Educational Development Laboratory.

Hall, G.E., & Hord, S.M. (2015). *Implementing change: Patterns, principles and potholes (4th edition).* Upper Saddle River, NJ: Pearson Education.

ISBN-13: 978-0133351927

ISBN-10: 0133351920

Please let me know if you have questions about use of the SoCQ, or want met o look over the data and/or your interpretations.

Gene E. Hall, Ph.D., Professor

APPENDIX E

PERCENTILE CONVERSION CHART FOR THE SOCQ

Raw Scale Score	Percentile Scores						
	0	1	2	3	4	5	6
0	0	5	5	2	1	1	1
1	1	12	12	5	1	2	2
2	2	16	14	7	1	3	3
3	4	19	17	9	2	3	5
4	7	23	21	11	2	4	6
5	14	27	25	15	3	5	9
6	22	30	28	18	3	7	11
7	31	34	31	23	4	9	14
8	40	37	35	27	5	10	17
9	48	40	39	30	5	12	20
10	55	43	41	34	7	14	22
11	61	45	45	39	8	16	26
12	69	48	48	43	9	19	30
13	75	51	52	47	11	22	34
14	81	54	55	52	13	25	38
15	87	57	57	56	16	28	42
16	91	60	59	60	19	31	47
17	94	63	63	65	21	36	52
18	96	66	67	69	24	40	57
19	97	69	70	73	27	44	60
20	98	72	72	77	30	48	65
21	99	75	76	80	33	52	69
22	99	80	78	83	38	55	73
23	99	84	80	85	43	59	77
24	99	88	83	88	48	64	81
25	99	90	85	90	54	68	84
26	99	91	87	92	59	72	87
27	99	93	89	94	63	76	90
28	99	95	91	95	66	80	92
29	99	96	92	97	71	84	94
30	99	97	94	97	76	88	96
31	99	98	95	98	82	91	97
32	99	99	96	98	86	93	98
33	99	99	96	99	90	95	99
34	99	99	97	99	92	97	99
35	99	99	99	99	96	98	99

APPENDIX F

TECHNOLOGY INTEGRATION SELF-EFFICACY SURVEY

Name: _____

E-mail address: _____

The purpose of this survey is to determine how you feel about **integrating technology into classroom teaching**. For each statement below, indicate the strength of your agreement or disagreement by circling one of the five scales.

Below is a definition of technology integration with accompanying examples:

Technology integration:

Using Web 2.0 tools to support students as they construct their own knowledge through the completion of authentic, meaningful tasks.

Using the above as a baseline, please circle one response for each of the statements in the table:

SD = Strongly Disagree, **D** = Disagree, **NA/ND** = Neither Agree nor Disagree,

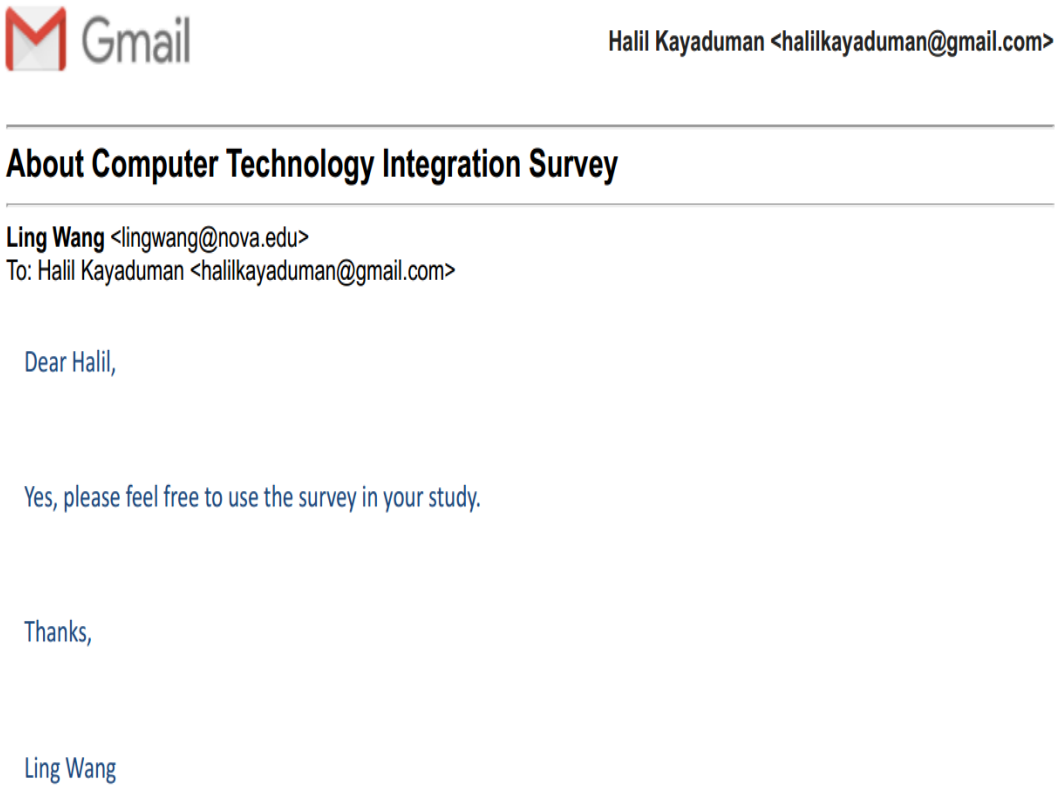
A= Agree, **SA**= Strongly Agree

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I feel confident that I understand Web 2.0 tools capabilities well enough to maximize them in my classroom	SD	D	NA/ND	A	SA
2. I feel confident that I have the skills necessary to use the Web 2.0 tools for instruction	SD	D	NA/ND	A	SA
3. I feel confident that I can successfully teach relevant subject content with appropriate use of technology	SD	D	NA/ND	A	SA
4. I feel confident in my ability to evaluate software for teaching and learning.	SD	D	NA/ND	A	SA
5. I feel confident that I can use correct Web 2.0 tools terminology when directing students' Web 2.0 tools use.	SD	D	NA/ND	A	SA
6. I feel confident I can help students when they have difficulty with the Web 2.0 tools.	SD	D	NA/ND	A	SA
7. I feel confident I can effectively monitor students' Web 2.0 tools use for project development in my classroom.	SD	D	NA/ND	A	SA
8. I feel confident that I can motivate my students to participate in technology-based projects.	SD	D	NA/ND	A	SA
9. I feel confident I can mentor students in appropriate uses of technology.	SD	D	NA/ND	A	SA
10. I feel confident I can consistently use educational technology in effective ways.	SD	D	NA/ND	A	SA

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
11. I feel confident I can provide individual feedback to students during technology use.	SD	D	NA/ND	A	SA
12. I feel confident I can regularly incorporate technology into my lessons, when appropriate to student learning.	SD	D	NA/ND	A	SA
13. I feel confident about selecting appropriate technology for instruction based on curriculum standards	SD	D	NA/ND	A	SA
14. I feel confident about assigning and grading technology-based projects.	SD	D	NA/ND	A	SA
15. I feel confident about keeping curricular goals and technology uses in mind when selecting an ideal way to assess student learning.	SD	D	NA/ND	A	SA
16. I feel confident about using technology resources (such as Google form) to collect and analyze data from student tests and products to improve instructional practices.	SD	D	NA/ND	A	SA
17. I feel confident that I will be comfortable using technology in my teaching.	SD	D	NA/ND	A	SA
18. I feel confident I can be responsive to students' needs during Web 2.0 tools use.	SD	D	NA/ND	A	SA
19. I feel confident that, as time goes by, my ability to address my students' technology needs will continue to improve.	SD	D	NA/ND	A	SA
20. I feel confident that I can develop creative ways to cope with system constraints (such as budget cuts on technology facilities) and continue to teach effectively with technology.	SD	D	NA/ND	A	SA
21. I feel confident that I can carry out technology based projects even when I am opposed by skeptical colleagues	SD	D	NA/ND	A	SA

APPENDIX G

PERMISSION FOR TECHNOLOGY INTEGRATION SELF-EFFICACY SURVEY



Gmail

Halil Kayaduman <halilkayaduman@gmail.com>

About Computer Technology Integration Survey

Ling Wang <lingwang@nova.edu>
To: Halil Kayaduman <halilkayaduman@gmail.com>

Dear Halil,

Yes, please feel free to use the survey in your study.

Thanks,

Ling Wang

APPENDIX H

ASSIGNMENT-1

Name:

Surname:

In this activity, you are going to learn how Zimmertwinsatschool.com, a Web 2.0 tool, can support lesson objectives. To do it, please follow the steps stated below.

- Investigate sample lesson activity
- Write objectives
- Explore Zimmertwinsatschool
- Fill the table below.
- Upload to METU CLASS

Objectives: • Write two objectives for English Language (Vocabulary, Grammar, Speaking or etc.). • Write an objective to be attained by the help of Zimmertwinsatschool.	
Main Features of Zimmertwinsatschool: • List the main features of this tool.	

Pedagogical Affordances of the Zimmertwinsatschool: • When it is used in English Language Teaching, how can it contribute to teaching or learning process? Please state your ideas freely.	
Limitations of the Zimmertwinsatschool: • What might be the limitations of using this tool for educational activities?	
Design activity: • Design a lesson activity in which Zimmertwinsatschool will help you attain goals and objectives of lesson. • Please state what the possible roles of the teacher and students are in the activities.	
Reflection: • How might students' respond to instruction, when Zimmertwinsatschool is used in ELT? • Which objectives in ELT are suitable for using Zimmertwinsatschool?	

APPENDIX I

ASSIGNMENT-2

Name:

Surname:

In this activity, you are going to learn how **bubble.us**, a Web 2.0 tool, can support instructional strategies. For example; Bubble.us can support brainstorming, discussion or concept mapping strategies.

Chosen Strategies of Instruction • Choose an instructional strategy so that it can be supported by the help of **bubble.us**	
Main Features of bubble.us: • List the main features of **bubble.us**	

Pedagogical Affordances of bubble.us: • When **bubble.us** is used in English Language Teaching, how can it contribute to teaching or learning process? Please state your ideas freely.	
Limitations of bubble.us: • What might be the limitations of using **bubble.us** for educational activities?	
Design Activity: • Design a lesson activity in ELT that supported by **bubble.us** (Please consider the compatibility of Technology, Pedagogy, and Content; TPACK) • What can be the role of the teacher and students in activities?	
Reflection: • When **bubble.us** is used in ELT, how might teaching and learning activities change? Why? • How might using **bubble.us** affect the learning and attitudes of students toward English Language? Why?	

APPENDIX J

ASSIGNMENT-3

Name:

Surname:

In this activity, you are going to learn how **quizlet.com**, a Web 2.0 tool, can support assessment strategies in ELT. Please fill the table below.

Main Features of quizlet.com: • List the main features of quizlet.com	
Limitations of quizlet.com: • What might be the limitations of using this tool for educational activities?	
Pedagogical Affordances of Quizlet: • When quizlet.com is used in English Language Teaching, how can it contribute to teaching or learning process?	
Assessment Activity Design:	

• Design an assessment activity that supported by Quizlet. • Explain this process in detailed way.	
Reflection: • How might Web 2.0 tools influence the efficiencies teaching and learning process? Explain it in detailed way? • How might Web 2.0 tools affect the time and energy commitment of a teacher? Why?	

APPENDIX K

ASSIGNMENT-4

Name:

Surname:

In this activity, you are going to learn how **blogger.com**, a Web 2.0 tool, can be used as a portfolio assessment.

Main Features of blogger.com: • List the main features of blogger.com	
Limitations of the blogger: • What might be the limitation of using this tool for educational activities?	
Pedagogical Affordances of blogger.com:	

• When blogger.com is used in English Language Teaching, how can it contribute to teaching or learning process?	
Assessment Activity Design: • Design an assessment activity in ELT that supported by blogger.com. • Explain this process in detailed way.	
Reflection: • How might using Web 2.0 tools in ELT affect teaching profession of teachers? Why? • How might engagement of students be affected toward lesson when blog is used as an assessment strategy in ELT? Why?	

APPENDIX L

ASSIGNMENT-5

Name:

Surname:

In this activity, you are going to learn how socrative.com, a Web 2.0 tool, can support teaching. Please fill the table below.

Main Features of socrative.com: • List the main features of **socrative.com:**	
Limitations of socrative.com: • What might be the limitations of using this tool for educational activities?	
Pedagogical Affordances of socrative.com: • When **socrative.com** is used in English Language Teaching, how can it contribute to teaching or learning process?	
Activity Design: • Choose a topic in ELT and design an activity that	

supported by socrative.com. • Explain this process in detailed way.	
Reflection: • What might be the possible advantages of using socrative.com while you implement in your classroom? Please explain it.	

APPENDIX M

ASSIGNMENT-6

Name:

Surname:

In this activity, you are supposed to design a lesson activity for your specified topic by taking advantage of **Facebook**. Please fill the table below.

Main Features of the Facebook: • List the main features of Facebook	
Limitations of Facebook: • What might the limitations of using this tool for educational activities?	

Pedagogical Affordances of Facebook: • When Facebook is used in English Language Teaching, how can it contribute to teaching or learning process?	
Activity design: • Design a lesson activity that supported by Facebook. • Explain this process in detailed way.	
Reflection: • What are the possible advantages of using Facebook while you implement a lesson activity for your instruction? Explain it in detailed way.	

APPENDIX N

COMPREHENSIVE LESSON PLAN

Grade Level:

- State your lesson's grade level. For example: 4th grade elementary school students.

Title:

- State title of your lesson. For example: Daily routines.

Description of the Lesson:

- Explain the scope of your lesson. For example: The lesson is about daily routines. This lesson covers the topics related to daily routines such as having breakfast, going to the school, visit parents or etc.

Target Learners: This section is hypothetical. Specifying your learners affect the rest of your instruction such as goals, objectives, instructional methods and strategies, selection of Web 2.0 tools, roles of students and teacher and assessment strategies. Consider following items;

- Explain the general characteristics of your students. For example: The students are 14 and 15 years old. Students come from moderate to low socioeconomic environments. Generally, students are well behaved. However, they show lack of interest and apathy toward learning when activities are textbook and paper and pencil oriented.
- Explain the entry competencies of students. For example: The students in general are able to do following;

    - Create and save word document
    - Navigate the internet
    - Register to any kind of web site
    - Create and save video
- Explain the learning styles of students. For example: Students appear to learn best from activities that incorporate technology. Some of students like inputting their thoughts as written text, others choose audio recordings.

Goals of the Lesson: State the performance expected of each student in class without criteria of achievement and consider the scope of your lesson while stating goals. Goals of the lesson affect objectives, instructional methods and strategies, selection of Web 2.0 tools, roles of students and teacher and assessment strategies.

- What are the goals of the lesson?

Objectives of the Lesson: State the performance to be demonstrated by each student in the class (derived from goals of the lesson) and phrase them in measurable and observable terms.

- What are the objectives of the lesson?

Instructional Design: Consider the following questions and state your plan in paragraph. You don't need to answer each question separately but this section should include all information pointed out in questions.

- Where does learning take place? Explain it.
    - (Classroom, online or both)
- Which instructional methods and strategies are you going to use to achieve the goals and objectives of the instruction? Explain why you are going to use these methods and strategies and how these methods and strategies support goals and objectives of lesson.
    - Instructional methods and strategies help attain the goals and objectives of instruction.
    - Instructional methods and strategies should be compatible with your content and technology (Consider TPACK)

- Which Web 2.0 tools are you going to use to support instructional methods and strategies? Explain how you are going to use and why. You are supposed to use at least two Web 2.0 tools for your lesson. Build a bridge between instructional methods and strategies and Web 2.0 tools to achieve the objectives.
- What is the roles of teachers in these instructional methods and strategies? Explain it.
    - For example: Teacher becomes facilitator and facilitate discussion and monitors students or Teacher role is minimal or not needed.
- What is the roles of students in this instructional methods and strategies? Explain it.
    - For example: Students are in active role, participate in discussions and express their thoughts online. By doing so, their learning outcome can become more satisfactory.
- How are you going to provide feedback to your students about their progress? Explain it.
    - Monitoring and providing feedback are the essential part of learning. Web 2.0 tools are practical to monitor students and provide feedback such as commenting or liking their posts are kind of feedback for students

Flow of the lesson:

- By considering the aforementioned steps, state your lesson plan activities from beginning to the end (assessment should not be included here) in detailed way and clearly.
- Lesson does not have to finish after an hour. It can be extended or done online.

Assessment:

- How are you going to assess the learning of the students? State your assessment strategies in detailed way.
    - Teachers can assess products of students as well; such as video, audio, concept map or online posts to measure learning of the students.
- How are you going to take advantage of Web 2.0 tools to assess the learning of the students?
    - Which Web 2.0 tools are you going to use to facilitate your assessment strategies?
    - Explain it in detailed way.

APPENDIX O

FOCUS GROUP INTERVIEW-1

Merhaba ismim Halil, ODTU-BOTE' de doktora yapmaktayım. Teknolojiyi tasarlayarak öğrenme yaklaşımının öğretmen eğitiminde kullanılması ile ilgili bir araştırma yürütmekteyim. Bu çalışmanın amacı sizler ile laboratuvarda yürüttüğümüz haftalık etkinlikler ilgili değerli görüşlerinizi almaktır. Bu görüşme sonunda elde edilen bilgiler sadece bu araştırma kapsamında kullanılacaktır ve kişisel bilgiler kesinlikle gizli tutulacaktır. Görüşme sırasında kendinizi rahatsız hissederseniz veya herhangi bir sebeple devam etmek istemezseniz, görüşmeyi hiçbir gerekçe belirtmeden yarıda bırakabilirsiniz. İzin verirseniz görüşmeyi ses kayıt cihazıyla kaydetmek istiyorum. Bu görüşmeyi kabul ettiğiniz için şimdiden teşekkür ediyorum. Sormak istediğiniz herhangi bir soru yoksa sorulara geçmek istiyorum.

1. İngilizce öğretiminde teknoloji entegrasyonu ile ilgili olarak "Technology Integration in Education" ve "TPACK" konulu sunumların sizlere ne tür katkılar sağladığını söyleyebilirsiniz?
   1.1. Sunumu CEIT bölümünden birinin yapmasının nasıl bir katkısı olduğunu düşünüyorsunuz?
   1.2. Sunum esnasında yürütülen tartışma sorularının ne tür katkıları olduğunu söyleyebilirsiniz? (Teknolojinin tanımı, faydaları, eğitim fakültesinde yürütülen teknoloji derslerin nasıl olması gerektiği).
2. İngilizce öğretiminde yazmış olduğunuz hedeflere ulaşmaya çalışmak amacıyla Zimmertwinsatschool isimli Web 2.0 uygulamasını kullanarak bir etkinlik yaptınız.
   2.1. Bu etkinlikte en verimli olduğunu düşündüğünüz bölümler nelerdi?
   2.2. Bu etkinlikte gereksiz gördüğünüz bölüm var mıydı?

2.3. Bu etkinliğin sizin ders hedefleri yazma konusunda bilgi ve becerilerinize nasıl katkısı olduğunu söyleyebilirsiniz?

2.4. Bu etkinliğin derste teorik olarak işlediğiniz konuları daha iyi anlamanız adına size ne gibi katkıları olduğu düşünüyorsunuz?

2.5. Bu etkinliğin İngilizce öğretiminde teknoloji kullanımını konusunda size ne tür katkılar yaptığını söyleyebilirsiniz?

Soracaklarım bitmiştir. Sizlerin sormak istediği sorular varsa sorabilirsiniz.

Katıldığınız için çok teşekkür ederim.

APPENDIX P

FOCUS GROUP INTERVIEW-2

Merhaba ismim Halil, ODTU-BOTE' de doktora yapmaktayım. Teknolojiyi tasarlayarak öğrenme yaklaşımının öğretmen eğitiminde kullanılması ile ilgili bir araştırma yürütmekteyim. Bu çalışmanın amacı sizler ile laboratuvarda yürüttüğümüz haftalık etkinlikler ilgili değerli görüşlerinizi almaktır. Bu görüşme sonunda elde edilen bilgiler sadece bu araştırma kapsamında kullanılacaktır ve kişisel bilgiler kesinlikle gizli tutulacaktır. Görüşme sırasında kendinizi rahatsız hissederseniz veya herhangi bir sebeple devam etmek istemezseniz, görüşmeyi hiçbir gerekçe belirtmeden yarıda bırakabilirsiniz. İzin verirseniz görüşmeyi ses kayıt cihazıyla kaydetmek istiyorum. Bu görüşmeyi kabul ettiğiniz için şimdiden teşekkür ediyorum. Sormak istediğiniz herhangi bir soru yoksa sorulara geçmek istiyorum.

1. İngilizce öğretiminde kullanılabilecek, "Bubble.us" Web 2.0 aracından faydalanarak ders etkinlikleri tasarladınız. Bu etkinlik "Bubble.us aracından faydalanarak İngilizce öğretiminde kullanılabilecek öğretim stratejisi belirleme", "Bubble.us aracının özelliklerini inceleme", "Bubble.us aracın kullanım sınırlılıklarını belirleme", "Bubble.us İngilizce öğretimine katkı getireceği pedagojik faydaları araştırma", "Bubble.us aracının kullanıldığı ders aktiviteleri tasarlama", ve "Yansıma soruları" bölümlerini kapsamaktadır.
   1.1. Bu etkinlikte sevdiğiniz ya da sevmediğiniz şeyler var mıydı? Bunlar nelerdi? Neden?
   1.2. Bu etkinliğin sizlere sağladığı ana katkılar neler oldu? Neler öğrendiniz?
   1.3. Bu etkinliği yaparken karşılaştığınız zorluklar var mıydı? Hangi bölümleri yaparken zorlandınız? Neden?

1.4. Bu etkinlik bir öğretim stratejisini uygulanma ve teknoloji ile destekleme konusunda bilgi ve becerilerinizi nasıl etkiledi?

2. İngilizce öğretiminde ölçme/değerlendirme kapsamında Quizlet ve Blogger Web 2.0 araçlarından faydalanarak değerlendirme etkinlikleri tasarladınız. Bu etkinlik "Quizlet ve Blogger araçlarının özelliklerini inceleme", "Bu araçların kullanım sınırlılıklarını belirleme", "Bu araçların İngilizce öğretimine katkı getireceği pedagojik faydaları araştırma", "Bu araçların kullanıldığı ölçme/değerlendirme aktiviteleri tasarlama" ve "Yansıma soruları" bölümünü kapsamaktadır.
   2.1. Bu etkinlikte sevdiğiniz ya da sevmediğiniz şeyler var mıydı? Bunlar nelerdi? Neden?
   2.2. Bu etkinliğin sizlere sağladığı ana katkılar neler oldu? Neler öğrendiniz?
   2.3. Bu etkinliği yaparken karşılaştığınız zorluklar var mıydı? Hangi bölümleri yaparken zorlandınız? Neden?
   2.4. Bu etkinlik İngilizce öğretiminde ölçme/değerlendirme aktiviteleri tasarlama ve teknoloji ile destekleme konusunda bilgi ve becerilerinizi nasıl etkiledi?
3. İngilizce öğretiminde kullanılan öğretim yöntemlerinden doğrudan anlatım metodunu (direct instruction) desteklemek için Socrative ve tartışma (discussion) metodunu desteklemek için de Facebook Web 2.0 araçlarından faydalanarak ders etkinlikleri tasarladınız. Bu etkinlik "Socrative ve Facebook araçlarının özelliklerini inceleme", "Bu araçların kullanım sınırlılıklarını belirleme", "Bu araçların İngilizce öğretimine katkı getireceği pedagojik faydaları araştırma", "Bu araçların kullanıldığı doğrudan anlatım ve tartışma öğretim yöntemleri aktiviteleri tasarlama" ve "Yansıma soruları" bölümünü kapsamaktadır.
   3.1. Bu etkinlikte sevdiğiniz ya da sevmediğiniz şeyler var mıydı? Bunlar nelerdi? Neden?
   3.2. Bu etkinliğin sizlere sağladığı ana katkılar neler oldu? Neler öğrendiniz?
   3.3. Bu etkinliği yaparken karşılaştığınız zorluklar var mıydı? Hangi bölümleri yaparken zorlandınız? Neden?
   3.4. Bu etkinlik İngilizce öğretiminde öğretim yöntemlerini tasarlama ve teknoloji ile destekleme konusunda bilgi ve becerilerinizi nasıl etkiledi?
4. Öğretim stratejileri, Ölçme ve değerlendirme ve Öğretim yöntemleri kapsamında yapılan bu etkinlikler İngilizce öğretiminde teknoloji kullanımı konusunda size ne tür katkılar sağladı?

4.1. İlgi ve merak

4.2. Bilgi

4.3. Ders aktivitesi tasarlama

Soracaklarım bitmiştir. Sizlerin sormak istediği sorular varsa sorabilirsiniz.

Katıldığınız için çok teşekkür ederim.

APPENDIX Q

FOCUS GROUP INTERVIEW-3

Merhaba ismim Halil, ODTU-BOTE' de doktora yapmaktayım. Teknolojiyi tasarlayarak öğrenme yaklaşımının öğretmen eğitiminde kullanılması ile ilgili bir araştırma yürütmekteyim. Bu görüşme sonunda elde edilen bilgiler sadece bu araştırma kapsamında kullanılacaktır ve kişisel bilgiler kesinlikle gizli tutulacaktır. Görüşme sırasında kendinizi rahatsız hissederseniz veya herhangi bir sebeple devam etmek istemezseniz, görüşmeyi hiçbir gerekçe belirtmeden yarıda bırakabilirsiniz. İzin verirseniz görüşmeyi ses kayıt cihazıyla kaydetmek istiyorum. Bu görüşmeyi kabul ettiğiniz için şimdiden teşekkür ediyorum. Sormak istediğiniz herhangi bir soru yoksa sorulara geçmek istiyorum.

1. Bu ders kapsamında, Web 2.0 araçlarıyla desteklenmiş ders aktivitelerinin bulunduğu kapsamlı bir ders planını grup arkadaşlarınızla tasarladınız.
   - 1.1. Ders planı tasarlama etkinliğinde sevdiğiniz ya da sevmediğiniz şeyler var mıydı? Bunlar nelerdi? Neden?
   - 1.2. Ders planı tasarlama etkinliğinin sizlere sağladığı katkılar neler oldu?
     - 1.2.1. Web 2.0 araçlarının kullanımı konusunda yeterliliğinize nasıl katkısı oldu?
     - 1.2.2. İngilizce öğretiminde teknoloji kullanımını konusunda bir merak ya da isteklilik uyandırdı mı?
     - 1.2.3. Web 2.0 araçlarıyla desteklenmiş ders aktiviteleri tasarlama konusunda nasıl katkısı oldu?
   - 1.3. Ders planı tasarlama etkinliği kapsamında yapılan akran değerlendirmesinin sizlere nasıl katkıda bulunduğunu söyleyebilirsiniz? Neler öğrendiniz?
   - 1.4. Ders planı tasarlama etkinliğini yaparken karşılaştığınız zorluklar var mıydı?

1.4.1. Bunlar nelerdi?

1.4.2. Bu zorlukları aşmak için neler yaptınız?

Soracaklarım bitmiştir. Sizlerin sormak istediği sorular varsa sorabilirsiniz.

Katıldığınız için çok teşekkür ederim.

APPENDIX R

INDIVIDUAL INTERVIEW

Her şeyden önce bu görüşme talebine olumlu yanıt verip katıldığın için teşekkür ederim. Web 2,0 araçlarının İngilizce öğretiminde kullanımı hakkındaki düşüncelerin üzerine konuşmak istiyorum. Vereceğin geri dönütler bizim için çok değerli, bu konuda tamamen özgür ve samimi cevaplar verebilirsin. Verdiğin cevaplar kişisel kimlikliğin açıklanmadan bilimsel çalışmalarda kullanılabilir. Tüm görüşmeyi ses kayıt cihazına kaydedeceğim, görüşmeden sonra kullanılmasını istemediğin konuşmaların olursa o kısımları sildirebilirsin. Bu görüşme yaklaşık 30dk sürecek. Eğer herhangi bir sorunuz yoksa sorulara başlayabiliriz.

STAGES OF CONCERN

1. Web 2.0 araçlarının kullanımı konusunda ne kadar ilgili olduğunu düşünüyorsun?
   1.1. Web 2,0 araçlarıyla ilgilenmeni engelleyen başka önceliklerin ya da seni meşgul eden başka şeyler var mı? Bunlar neler?
2. Web 2,0 araçlarının kullanımı konusunda neler biliyorsun? Ne tür kullanım olanaklarına sahip olduğunu düşünüyorsun?
   2.1. Web 2,0 araçlarını kullandığın durumlarda nelere ihtiyacın olacağını düşünüyorsun?
   2.2. Web 2,0 araçlarının kullanımını konusunda daha çok bilgi sahibi olmak ister misin? Neden?
3. Web 2,0 araçlarının kullanımının, öğretmen olarak mesleki durumunu nasıl etkileyeceğini düşünüyorsun?
   3.1. Web 2,0 araçlarını kullanarak bir ders yürüttüğünde
      3.1.1. Uyguladığın öğretim yöntem ve stratejilerinin,

3.1.2. Sınıftaki rolünün,

3.1.3. Sınıf yönetimin,

3.1.4. Harcayacağın zaman ve emeğin nasıl etkileneceğini ve değişeceğini düşünüyorsun?

4. Web 2,0 araçlarının kullanıldığı bir İngilizce dersi tasarladığında, ders etkinliklerinin tasarımı ve uygulaması konusunda neler yapabileceğini düşünüyorsun? Bu konularda kendini ne kadar yeterli görüyorsun?
5. Web 2,0 araçlarının kullanıldığı bir İngilizce dersinde,
   5.1. Öğrencilerin derse karşı olan tutumlarının nasıl olacağını düşünüyorsun?
   5.2. Öğrencilerin öğrenmelerinin nasıl etkileneceğini düşünüyorsun?
6. Web 2,0 araçlarının kullanımı konusunda İngilizce öğretmenleriyle, diğer branşlardan öğretmenlerle ya da öğretim üyeleriyle birlikte çalışıp ortak çalışmalar yürütmek ister misin? Neden?
   6.1. Başka öğretmenlerin ya da öğretim üyelerinin Web 2,0 araçlarını nasıl kullandığı konusunda bilgi sahibi olmak ister misin? Neden?
   6.2. Ne tür çalışmalar yapılabilir?
7. İngilizce dersi etkililiğini ve verimliliğini daha artırabilmek için neler yapılabilir?
   7.1. Web 2,0 araçlarının yeniden yapılandırılması konusunda,
   7.2. Web 2,0 araçlarının kullanıldığı ders aktivitelerinin çeşitlendirilmesi konusunda,
   7.3. Web 2,0 araçları haricinde alternatif olarak farklı teknolojiler, yöntemler ya da stratejiler konusunda
8. Öğretmenlik mesleğine başladığında, Web 2,0 araçlarından faydalanmayı düşünüyor musun?
   8.1. Neden?
   8.2. Nasıl?

TECHNOLOGY INTEGRATION SELF-EFFICACY

9. Web 2,0 araçlarının kullanımı konusunda kendini ne kadar yeterli görüyorsun?
   9.1. Bu araçları etkili bir şekilde kullanabileceğini düşünüyor musun?
10. Bu araçların kullanımı konusunda öğrenciler zorluk çektiklerinde onlara gerekli desteği sağlayabilme konusunda kendini ne kadar yeterli görüyorsun?

11. Web 2,0 araçları tabanlı hazırlanmış öğrenci ödevleri ve projelerini değerlendirebilme konusunda kendini ne kadar yeterli görüyorsun?
12. Öğretmenlik mesleğine başladığında, Web 2,0 araçlarından faydalanmayı düşünüyor musun?
    12.1. Neden?
    12.2. Nasıl?

Soracaklarım bitmiştir. Sizlerin sormak istediği sorular varsa sorabilirsiniz.

Katıldığınız için çok teşekkür ederim.

APPENDIX S

INTERVIEW TRANSLATIONS

1. 13May1-PST-2:
   1.1. Original: Ben mesela kendim hazırlarken zevk aldıklarım oldu bu toolar da hani ve öğrencilerimde de kullandığımda onlarında zevk alacağını düşünerek hani öyle bir heyecan mı diyeyim bir istek uyandırdı şahsen hani kendimde zevk aldığım için öğrenciler için aynı zevki verebileceğini düşünüyorum.
   1.2. Translation: There were Web 2.0 tools that I enjoyed while I was preparing the activities. I thought that my students would also enjoy when I used them in the classroom. Hence, these activities aroused my interest and accordingly I thought that I could arouse the interest of students since I enjoyed them as well.
2. II- PST-6:
   2.1. Original: Bizim bölümümüzde daha fazla bir şeyler yazmamız gerekiyor, daha fazla ödevim oluyor yani kendi sorumluluklarım daha fazla ödevlerim falan var. Yani ilgim var ama çok fazla değil o yüzden de ister istemez ben kendi notlarıma öncelik veriyorum. Onlar yükselsin diye uğraşıyorum. Yani diğer derslerimin notları hani kendi bölümüm olduğu için yani content knowledge oluyor onları daha fazla yükseltmem gerekiyor.
   2.2. Translation: We have to do more in our department and accordingly I have more responsibilities and homework for my department. I am interested but not much. So inevitably I prioritize my grades and try to increase them. Since the grades of other courses are my major field, I firstly need to increase their grades.
3. II-PST-1:

3.1. Original: ilgili olduğumu düşünmüyorum. Çok ilgili değilim yani ben genel olarak teknolojiye karşı bir ilgim yok mesela sosyal medya mesela facebook acccountum da yok benim yani çok ilgi duymuyorum.

3.2. Translation: I don't think I am interested. I mean I have no interest in technology in general. For example, I do not have social media accounts such as Facebook as well. That is, I am not very interested.

4. 11May-PST-15:

4.1. Original: Bir şeyi fark ettik mesela birçok siteyi bilmiyormuşuz hani bunları hazırlarken lab da gördüğümüz toollarla falan hani yeni ve daha değişik siteler görmüş olduk.

4.2. Translation: We noticed that we did not know many web sites. That is, we learned new and different web sites that we covered in the lab activities.

5. 30Mar-PST-8:

5.1. Original: şimdi hani limitasyonlarla ve onun nedir artısı eksisi şeyini yazmamız o tool un bu da bize hani toolun nerede kullanabileceğimizi nerede kullanamayacağımız hakkında bir bilgi sahibi olmamıza katkı sağlıyor.

5.2. Translation: Exploring the limitations and writing Web 2.0 tools' pros and cons contribute to our knowledge about where we can use these tools and where we cannot use.

6. II-PST-6:

6.1. Original: Birçok amaçla kullanılabilir ama ben kendi bölümüm için konuşayım günün birinde öğretmen olduğumda bazıları video kayıtları ile ilgili yani speaking ya da listening derslerinde bunları kullanabilirim. Onun dışında başka test çözme mesela socrativedi mesela o çok iyiydi mesela test olarak öğrenciler hem kendi kendilerini değerlendirebilirler hem öğretmen onları değerlendirebilir. Yani kendi alanımla daha çok kullanabileceğimi düşünüyorum.

6.2. Translation: They can be used for many purposes but I speak for my own major field. When I become a teacher one day, I can use them for listening and speaking classes. Apart from these, there was a tool, Socrative, which was very good for testing. Both teachers can assess students and students can

assess themselves with this tool. So I think I can use them more for my major field.

7. II-PST-2:
   7.1. Original: Fiziksel koşulların iyi olması gerekiyor tabi ki. İşte internet ortamı olması gerekiyor genellikle çünkü internet üzerindenler zaten. Yeterli sayıda bilgisayar olması gerekiyor sınıfta. İcabında işte akıl tahta ile falanda desteklenmesi gerekiyor okulda kullanabilmem için.
   7.2. Translation: Physical conditions need to be good, of course. That is, internet connection is required since they generally work on the internet. Besides, there must be enough number of computers in the classroom. If necessary, tools might require to be supported by the help of smart boards in order for me to use in the school.
8. II-PST-7:
   8.1. Original: öğrenci profili de önemli bence hani mesela bir öğrenci bilgisayar hakkında çok bilgili olup da diğerinin daha kötü bir aileden gelip bilgisayar olmaması internet hakkında bilgisinin olmaması kötü olur hani eşit bir öğrenci profili lazım bence.
   8.2. Translation: I think student profile is also important. For instance, while a student is very knowledgeable about computers, others might not have computers and internet connection since they come from low socio-economic background. Therefore, I think student profiles should be equal.
9. II-PST-1:
   9.1. Original: öncelikle bilgisayar okuryazarlığı gerekiyor onu biliyorum. Hangi amaçla kullanacağımızı bilmemiz lazım. Bilgisayar kullanımını bilmemiz lazım. O web 2.0 toolun ne işe yaradığını bilmemiz lazım ona göre kullanalım. Öğrencinin perspective den de bakmak lazım çocuğa bir input vereceksek hani nerede kullanacağını falan onu assess edebilir miyiz ne kadar faydalı derse ne kadar ilgili ilişkili. Dersle ilgili olsa bile konu ile ne kadar alakalı onu bilmemiz lazım.
   9.2. Translation: Firstly, I know that computer literacy is needed. We need to know on what purposes we will use the tools. We need to know how to use computers. We need to know the features of that Web 2.0 tool so that we can use it depending on the features. We have to look at the perspectives of

students as well, if we give an input to them. That is, we need to know how students will use the tool, how we will assess students when they use. Furthermore, we also need to know whether the tool is related to the lesson or not and how the tool is relevant to the subject.

10. II-PST-10:
    10.1. Original: İsterim kesinlikle. Çünkü elinizde ne kadar çok seçenek olursa onların arasından en doğrunun daha kolay seçebiliriz yani tek bir şey biliyorsak belki o tek bir şeyi uygun olmayan yerlerde kullanacağız ama ne kadar çok şey bilirsek ne kadar farklı toolar hakkında bilgilenebilirsek mesela diyebiliriz ki evet bunda bu özellik var ama böyle de bir limitasyonu var bunu kullanırsam daha iyi olur çünkü o limitasyonları daha azaltılmış. Hani örneğin mesela bunda öğrenciler birbirleriyle iletişime geçebilirken bunda geçmiyorlar o zaman bunu kullanayım gibi bir tercih hakkım olmuş olur ne kadar çok tool bilirsem. O yüzden daha çok bilgi edinmenin gerekli olduğunu düşünüyorum.
    10.2. Translation: I definitely want. Because the more choices you have, the easier it is to choose the right one among them. That is; if we know only one tool, maybe we will use that one in places that are not suitable. It can be good if we know more and different sort of tools. For instance, we can say that there is this feature but there is also a limitation, hence it is better if we use another one to remove the limitations. For example, I can say that this tool facilitates communication process among students but other one does not have this feature, therefore, I will have an option to prefer the right tool if I know different sort of tools. Therefore, I think that it is necessary to get more information.
11. II-PST-6:
    11.1. Original: Yani istemekten ziyade zorundaymışım gibi hissediyorum. O yüzden isterim. Daha önce açıkladığım gibi çağımızın öğrencileri daha fazla bilgisayarlarla o tarz şeylerle daha çok uğraşıyor yani eğitim ister istemez değişiyor artık daha değişik metotlar daha değişik teknikler kullanmamız gerekiyor teknolojiyi entegre etmemiz gerekiyor. O yüzden zorundaymışım gibi hissediyorum o yüzden istiyorum çünkü yeterli bir öğretmen olmam lazım onlar için.

11.2. Translation: I feel like I have to learn more, hence; I want to learn them. As I explained before, students are now more engaged with computers or similar technological items. That is, education system inevitably changes and accordingly we need to use different methods, techniques and integrate technology. Therefore, I feel like I have to learn more so that I can be an adequate teacher for students.

12. 30Mar-PST-10:

12.1. Original: Yani teknoloji de aslında artık hayatımızın da kaçınılmaz bir parçası ve hani çocuklarda bu şekilde yeni öğrenciler bu şekilde de yetiştikleri için eğitimde mutlaka kullanmamız gerekiyor ve hani nasıl kullanmalıyız, nasıl anlatacağımız konularla nasıl ilişkisini sağlayabiliriz ve nasıl hani nasıl alakasız olmamasını düşünebiliriz, bunları öğrendik aslında, ne faydaları hani ve bize ne açıdan fayda sağlayacak.

12.2. Translation: Technology is an integral part of our life. Since new students have grown up with technologies, we have to use them in education. We learned about how we should use technologies, how we can associate the tools with the topics, how we can make more relevant to our classes and how we can benefit from these tools.

13. II-PST-2:

13.1. Original: Daha öğrenci merkezli bir şekle dönüşür muhtemelen ders çünkü öğrenci aktif bir şekilde rol alacak bu web 2.0 tolları kullandığım zaman dolayısıyla o şekilde değişecektir yani öğretmen merkezliden öğrenci merkezliye yönelik bir değişim olacaktır.

13.2. Translation: The class will probably be more student-centered. When I use Web 2.0 tools, students will actively take part in learning process. Therefore; the classroom changes from teacher-centric to student centric.

14. II-PST-5:

14.1. Original: ben iyi etkileyeceğini düşünüyorum çünkü sonuçta benim alanım bilgisayar değil ya da başka bir şey değil bunları böyle baya düzgün bir şekilde kullanabilmek bence bir başarı yani. Birçok bizim yaşımızdaki öğretmenlerin çok fazla yapamayacağı bir şey olabilir yani o yüzden bizim bilmemiz artı bir şey. Öğrencilerinde gözünde evet hoca da bizim şeyleri

biliyor şeklinde onların da pozitif bir şekilde derse katılmasını sağlayabilir diye düşünüyorum. O yüzden önemli.

14.2. Translation: I think it will affect me in a good way. Using technologies properly is an achievement for me since it is not my major field. Knowing technologies is a plus because many teachers in our age may not be able to use them. Besides, students might think that the teacher also knows the things that we are familiar with and accordingly they can participate in the class. Therefore, it is important.

15. II-PST-9:

15.1. Original: Daha az yorucu en azından. Az zamanda daha çok aktivite hazırlayabiliriz ve mesela bir fon karton ya da çeşitli resimler kesip yapıştırmak tamam o da belki güzel gelebilir ama buna hem emek harcanır hem para harcanır hem de öğretmenin sonuçta hani estetik olmayabilir bu toolar kadar.

15.2. Translation: I think it is less tiring. We can prepare more activities in short times. For example; although it might be nice to cut and paste a cardboard or picture, this requires more effort and money. Moreover, it may not be as aesthetic as tools do.

16. 30Mar-PST-8:

16.1. Original: hani şimdi biz kendi kafamızda tahmin ediyoruz hani ne gibi eksikliklerimiz olabilir falan filan diye ama şimdi sınıfta uygulamadığımız zaman belki hiç aklımıza gelmeyecek şekilde bir eksikliği çıkacak mesela tool un biz her şey perfect şekilde sanki gerçekleşecekmiş gibi düşünüyoruz sonuçta yani spekulasyonlarla yola çıkmak o açıdan biraz zor yani.

16.2. Translation: Now we guess in our own mind about what kind of deficiencies we can have. When we implement in the classroom, maybe there will be a deficiency of the tool that will never come to our mind. We think as if everything will happen perfectly. After all, it is difficult to get out of the way with speculations.

17. 30Mar-PST-13:

17.1. Original: Biz burada mesela pratik yapınca ilerde öğretmen olduğumuz zaman hani ilk defa karşılaşmakla daha farklı oluyor hani burada pratik

yapıyoruz daha iyi öğreniyoruz. O yüzden öğretmen olduğumuzda daha iyi uygulayabiliriz derslerimizde.

17.2. Translation: When we practice here, it will be easier for us when we become a teacher in the future. We practice here and learn better. Therefore, when we become a teacher, we can implement them in our classroom in a better way.

18. II-PST-7:

18.1. Original: Ben onda kesinlikle zorlanacağımı düşünüyorum çünkü hani teknoloji çağındayız. Küçücük çocuklar bile biliyor nasıl bilgisayar internet kullanacaklarını ki okuma yazma öğrenmeden yani o yüzden kesinlikle dikkat dağıtılır hani ben toparlayamam diye düşünüyorum o sınıfı yani hâkimiyetimi elime alamam.

18.2. Translation: I think I will have difficulty with it because we are in technology era. Even little children know how to use computer and internet before learning writing and reading. Hence, students become absolutely distracted and I think I cannot control them and manage the classroom.

19. 11May-PST-15:

19.1. Original: öğrenciye yönelik daha yeni planlar planlanmış bir dersi onlara daha eğlenceli aktivite falan hazırlayabiliyoruz faydası olarak hani farkındalık falan yarattı bence.

19.2. Translation: We designed plans for students. We can prepare entertaining lesson activities aiming at students. Therefore, I think it created awareness for us.

20. 11May-PST-13:

20.1. Original: Bir de sonuçta dil hani tek başına bir şey değil çok fazla skill i var işte vocap, speaking, listening falan bunları mesela normal klasik bir yöntemle öğretmek hani çok kolay bir şey değil bence o yüzden bunun değişik hani web 20 toolarından yararlanılarak onların çünkü çok fazla seçeneği var özellikle young learnes için. İşte bir video hazırlayabilirsin ya da bir flashcard bir şey yaparak onların daha çok ilgisini çekecek ve öğrenmeleri daha çok kolay olacak o yüzden bence bunları kullanabiliriz diye düşünüyorum.

20.2. Translation: A language consists of a lot of skills such as vocabulary, speaking, listening etc. I think teaching these skills with traditional methods

is not easy. Hence, we can attract the attentions of students, facilitate their learning by using different Web 2.0 tools considering the many options especially for young leaners. For example, we can make a video or flashcards that will attract attention and facilitate learning. Therefore, I think we can use them.

21. 11May-PST-13:
    21.1. Original: Mesela bizim düşünmediğimiz şeylere bizim kendi planımıza koymadığımız şeylere ya da eksik olduğumuz yerlere arkadaşlarımızınkini de gördük mesela yani o şekilde eksiklerimizi tamamlayabiliyoruz belki tekrar bir son final planı verirken o yüzden bize yararlı olmuş olabilir.
    21.2. Translation: We saw the missing things that we did not think about or write in our lesson plan from other group lesson plans. Accordingly, we can complete our missing things. Therefore, it could be helpful to us before we submit the final plan.
22. 11May-PST-3:
    22.1. Original: arkadaşlarımın verdiği feedbackler ne kadar doğru olabilir hani o da tartışılır.
    22.2. Translation: It is doubtable about how accurate the feedback that my friend gave was.
23. II-PST-2:
    23.1. Original: aynı branştan öğretmenlerle hani fikir alış verişi yaparak kendimizi geliştirebileceğimizi düşünüyorum veya hani oturup bir konu için hangi tool u kullanabiliriz falan dediğim gibi fikir alma anlamında aynı branştan öğretmenler yardımcı olacaktır, eğer biliyorlarsa onlarda tool kullanmayı.
    23.2. Translation: I think that we can improve ourselves by exchanging ideas with teachers from the same branch. Same branch teachers would be helpful, if they are knowledgeable as well. Such as we can talk about what tool we can use for a topic.
24. II-PST-11:
    24.1. Original: İngilizce öğretmeni mesela özelikle matematik öğretmeniyle collaboration yapması çok daha zor olur gibi geliyor. Çünkü matematik birazcık daha soyut sonuçta hani ondaki toolar biraz daha limited olabilir

mesela bizim şöyle bir avantajımız var İngilizce dünya dili ve milyonlarca kaynak bulabiliriz ve onları çok rahat copy paste yapıp bir toola ekleyebiliriz. Ama matematik için biraz daha soyut olduğu için hani belki biraz zorluklar çıkabilir.

24.2. Translation: It seems especially difficult to collaborate with a mathematics teacher, if you are an English language teacher. Because mathematics is a little more abstract, the tools can be used in mathematics could be limited. That is, we have an advantage. English is a world language and we can find millions of resources and add them to a tool by simply copying and pasting. However, it could be difficult for mathematics since it is a little more abstract.

25. II-PST-3:

25.1. Original: şu tableları da doldururken hani limitaitonlarından bahsediyorduk. Bu limitationlar üzerine yoğunlaşabilir. Mesela örnek vermek gerekirse zimmertwins mesela onda, tamam animasyonu yapıyorsun yazıyorsun ama bir ses yok bir listening bir speaking aktivitesi yok hani orada aynı zamanda işte çocuklara kendi seslerini de kaydedebilme imkanı verilebilir hani böyle şeyler geliştirilebilir daha çok bu limitationlar üzerinden yoğunlaşarak bunun nasıl bu özellikleri bu tool a ekleyebiliriz şeklinde düşünülebilir.

25.2. Translation: We were talking about the limitations while we were filling the tables. For example, although you can make an animation in Zimmertwins, there is no audio or speaking activity. Children should also be able to record their own voices. That is, such things could be developed considering these limitations and added to the tool.

26. 13May1-PST-1:

26.1. Original: yani o ortam varsa sınıfta daha önce bahsettiğimiz gibi imkan varsa ellerinde tabletler falan internete herkes bağlanabiliyorsa kullanırım ben.

26.2. Translation: I would use if there is an environment as we mentioned earlier. Such as, students have tablet PCs and are able to connect to the internet.

27. II-PST-2:
    27.1. Original: Uygun skiller için uygun web 2.0 tooları kullanabileceğimi düşünüyorum yani onu seçebileceğimi düşünüyorum ve uygun etkinlikler hazırlayabilirim diye zannediyorum.
    27.2. Translation: I think I can use web 2.0 tools for the appropriate skills. That is; I think I can choose them and prepare proper activities.
28. II-PST-1:
    28.1. Original: Bu şekilde bir ders yürütemeyebilirim ben, çok yeterli görmüyorum kendimi çünkü çok fazla pratik olduğumu düşünmüyorum böyle şeylerde. Sadece web 2.0 tooları değil hani teknoloji ile alakalı bir şey kullanırken çok pratik olduğumu düşünmüyorum.
    28.2. Translation: I think I cannot conduct a lesson like this. I do not think that I am adequate since I am not very practical in this kind of things. I do not think I am very practical not only for Web 2.0 tools but also something related to technology.
29. II-PST-6:
    29.1. Original: aslında bu web 2.0 araçlarının çok güzel yanları var. Özellikle assessment kısmına geldiğinde, yani hemen sonuçları öğretmenin eline veriyor. Hatta öğretmenden ziyade öğrenci de kendi kendini değerlendirebiliyor. Yani zaten hazır olan bir şey önümdeyse tabi ki güzel bir şekilde değerlendiririm daha kolay olur benim için gibi geliyor.
    29.2. Translation: Actually, these Web 2.0 tools have many nice aspects. Especially when it comes to the assessment part, it gives the results immediately to teachers. Even more, students can also assess themselves. That is; it becomes easier for me and I can assess in a better way.
30. II-PST-8:
    30.1. Original: bildiğim bir tool olduğu için yani kullanacaklarım genelde o yüzden hani öğrenci bir zorluk çektiğinde onlara yardım edebileceğimi düşünüyorum açıkçası o konuda da bir güvenim var kendime. Bilmediğim toolu uygulamadan önce kendimi yeterli hissetmem lazım o tool u kullanabilmek için eğer yeterli hissettiğimde uygularım o zaman yapabilirim yani.

30.2. Translation: I think I can help students when they have difficulty, since I mostly use the tool that I know. I have confidence in that regard. In order for me to use a tool that I know, firstly I need to feel confident before I use it. That is; when I feel confident, then I can implement it.

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EDUCATION

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- **Master**, Computer Education and Instructional Technology, Hacettepe University, 2009-2011(Dropped out).
- **Integrated PHD**, Computer Education and Instructional Technology, Middle East Technical University, 2011-2017.
- **Research Scholar**, Educational Technology, University of Florida, 2015-2016.

WORK EXPERIENCE

- **K-12 Information Technology Teacher** at Ministry of National Education of Turkey, 2009-2010.
- **Research and Teaching Assistant** at Adiyaman University, 2010-2011.
- **Instructor at** CISCO, 2014- (Ongoing).
- **Research and Teaching Assistant** at Middle East Technical University, 2011- (Ongoing).

HONORS and AWARDS

- Graduated ranking second in the Department of Computer Education and Instructional Technology at the University of Inonu in 2008.

SKILLS and EXPERTISE

- Computer Network Operations (Switching and Routing),
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- Responsive Web Design
- Microsoft Office,
- Adobe Photoshop,
- Adobe Dreamweaver,
- Adobe Captivate
- Camtasia
- Usability Testing with Morae

PUBLICATIONS

ARTICLES

Kayaduman, H., & Delialioglu, Ö. (2016). Investigating Pre-Service English Teachers' Stages of Concern Toward Using Wiki. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 12(2),588-600.

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Sat, M., Kol, M., **Kayaduman, H.** & Baran, E. (2014). The Impacts of TPACK Workshop in Professional Experiences and Attitudes of In-Service Math Teachers. Paper presented at annual meeting of the Association for Educational Communications and Technology (AECT): Jacksonville, FL.

Kayaduman, H., Semiz, K., Sertel, O., Tokel, T. (2012). Design and Development of Physical Activity Environment in 3D Virtual World. Paper presented at the annual meeting of the Association for Educational Communications and Technology (AECT): Louisville, KY.

TEACHING ASSISTANTSHIP

- CEIT – 100: Computer Applications in Education
- CEIT – 207: Design and Use of Instructional Material
- CEIT – 213: Computer Hardware
- CEIT – 314: Computer Networks and Communications
- CEIT – 380: Teaching Methods in Computer Education
- CEIT – 435: Project Development and Management
- CEIT – 503: Educational Statistics

RESEARCH GROUPS

- Virtual Worlds Research Group at METU (2012- 2013)

SCHOLARSHIPS

- The Scientific and Technological Research Council of Turkey (TÜBİTAK), 2214A-Doctoral Research Scholarship Program.