Investigating the Pre-service English Teachers' Perceptions of the Use of Smart Board Technology

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ABSTRACT

The current case study attempted to investigate the English Language Teaching (ELT) students' perceptions regarding the use of smart board (SB) technology from two different perspectives: i) as current students and ii) as prospective teachers of English language. The target population of the study was the students enrolled in the ELT undergraduate program of the Foreign Language Education (FLE) department, at Eastern Mediterranean University (EMU). A total number of 100 pre-service teachers of English responded to the questionnaire and 14 students volunteered to participate in the interviews. Moreover, a triangulation of methods was applied to collect quantitative and qualitative data through the use of a questionnaire and semi-structured interviews. The questionnaire consisted of 26 items presented on 5-Likert scale of strongly agree to strongly disagree and included biographical questions and four open ended questions. It revealed a result of 88% of reliability on Cronbach's alpha scale of the SPSS program. The findings suggested that the pre-service teachers of English at the ELT program were positive about the smart board use and would like to integrate the tool in their future careers; however, the students specified their preferences over the tool's use and identified some shortcomings. The students believed that the smart board can be motivating, interesting, effective, fun, amusing, more convenient and easier to use, but they did not like the excessive use of PowerPoint presentations on the smart boards. Their responses also pointed out a lack of technological knowledge (TK) of both teachers and students to use the smart board and technical issues which caused waste of time during lessons.

The study is believed to be a basis for conducting more future research about the utilization of smart board technology inside the university's classrooms. The study can also provide an evidence for the administrators to invest more in smart board technology. On the other hand, further research can focus on the development of alternative ways to motivate the students and create the appropriate atmosphere for the utilization of the smart board technology to prevent somehow negative or unfavorable perceptions against it.

Keywords: smart boards, pre-service teachers, perceptions, teacher knowledge, technological knowledge

ÖZ

Bu çalışma, İngilizce Öğretmenliği programındaki öğrencilerin akıllı tahta teknolojisinin kullanımına ilişkin algılarını iki farklı açıdan araştırmayı hedeflemektedir: i) öğrenci olarak derslerde akıllı tahta kullanılmasına ilişkin algıları, ii) öğretmen adayı olarak akıllı tahtayı gelecekteki kariyerlerinde kullanmalarına ilişkin algı ve düşünceleri. Araştırmaya katılanlar, Doğu Akdeniz Üniversitesi'nde Yabancı Diller Eğitimi (YDE) Bölümünün İngilizce Öğretmenliği lisans programından gönüllü olarak katılan toplam 100 öğretmen adayıdır. Bu katılımcılara bir anket uygulaması yapılmış, ayrıca gönüllü 14 öğrenci ile de yarı-yapılandırılmış mülakat gerçekleştirilmiştir. Nicel veri toplama aracı olan anket, 'kesinlikle katılmıyorum' ile 'kesinlikle katılıyorum' seçenekleri arasında 5'li Likert ölçeğinde sunulan 26 maddeden oluşmakta, ayrıca katılımcıların biyografik özelliklerini araştıran sorularla dört adet açık uçlu soru içermektedir. Nitel veri toplama aracı olan yarı-yapılandırılmış mülakatta ise katılımcılara ankette sorulan soruların daha derinlemesine irdelenmesine yarayacak sorular yönlendirilmiştir. Bu sayede çalışmanın güvenirliği ve geçerliliğini artıracak veri çeşitlemesi sağlanmıştır.

Anketin SPSS programındaki analizi, anketin güvenilirliğini Cronbach alfa ölçeğinde % 88 olarak hesaplamıştır. Analiz sonucunda elde edilen bulgular, İngilizce Öğretmenliği programındaki öğretmen adaylarının akıllı tahta kullanımı konusundaki algılarının ve düşüncelerinin olumlu olduğunu ve bu eğitim aracını gelecekteki kariyerlerine entegre etmek istediklerini ortaya koymuştur. Ayrıca bulgular, katılımcıların akıllı tahta kullanımı konusundaki tercihlerini saptamış ve dile getirdikleri bazı eksiklikleri/aksamaları belirlemiştir. Öğrenciler akıllı tahtanın

kullanımının motive edici, ilginç, etkili, eğlenceli, daha kullanışlı ve daha kolay olduğunu vurgulamakla birlikte, akıllı tahtalarda Power Point sunumlarının aşırı kullanılmasından hoşlanmadıklarını belirtmişlerdir. Ayrıca verilen yanıtlar, hem öğretmenlerin hem de öğrencilerin teknolojik bilgi eksikliği (TK) olduğuna ve derslerde zaman kaybına neden olan teknik sorunların varlığına işaret etmiştir.

Çalışmanın, öğretmen eğitiminde akıllı tahta teknolojisinin kullanımı hakkında daha fazla araştırma yapmak için bir temel oluşturduğu söylenebilir. Çalışma bulguları, yöneticilerin akıllı tahta teknolojisine daha fazla yatırım yapmaları için bir kanıt olarak değerlendirilebilir. Öte yandan, akıllı tahta kullanımına karşı olumsuz algıların önlenmesi için akıllı tahta teknolojisinin kullanımına uygun ortamların yaratılmasına ve öğrencileri motive edecek alternatif yöntemlerin geliştirilmesine dair daha fazla araştırmanın yapılması önerilebilir.

Anahtar Kelimeler: akıllı tahtalar, öğretmen adayları, algı, öğretmen bilgisi, teknolojik bilgi

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Chapter 1

INTRODUCTION

This chapter presents background of the study, statement of the problem, aim of the study, research questions, significance of the study, and concludes with explaining the major terms of the study.

1.1 Background of the Study

Nowadays almost every aspect of our lives, including the domain of education, is dramatically affected by technology. According to Wishart and Blease (1999), there is a great need to investigate whether technologies can enhance learning. For many scholars, technologies can be tremendously supportive for students; therefore, they can be integrated and implemented in educational settings to achieve better learning outcomes and to help in accomplishing successful processes of teaching and learning (Kennewell, Tanner, Jones & Beauchamp, 2008; Mobbs, 2002). Furthermore, the 21st century has witnessed the emergence of various innovative technological tools, including those of information and communication technologies (ICTs). Such tools can eventually become significant tools in daily routines of the teaching and learning process to help accessing various resources of information. ICTs are also thought to be effective means. That is, they are tools and materials that can help to develop students' skills; facilitate in the process of teaching and learning and successfully address different kinds of learning styles and learners' needs. As highlighted by Mobbs (2002), these kinds of tools can be utilized to create an interactive instructional atmosphere inside the classroom. Generally, interactive learning can

help students to obtain the needed skills for the 21st century, such as collaboration and cooperation (social networking), critical thinking, communication, and problem-solving (Kennewell et al., 2008).

Apparently, interactive technologies are gaining more popularity recently. The smart board (SB), which is an example to ICTs, is an interactive device that can be connected to a computer through an interface; the students can see and interact with the displayed content using a digital projector (SMART Technologies, 2006). Evidently, the tool helps in motivating the students and encourages them to be more productive during their daily classes. There are many studies which reported various advantages of using smart boards in class (Campbell & Kent, 2010; Elaziz, 2008; Hall & Higgins, 2005; Türel, 2011). Accordingly, the implementation of smart board technology can provide some benefits which include: 1) multiple means of participation: the smart board is very stimulating and helps the students to maintain their interest and attention; 2) multiple means of representation: smart boards can provide the teacher with a chance to demonstrate a rich variety of information using various linguistic and non-linguistic media; for example, illustrations, audio and video clips, texts, etc.; 3) multiple means of action and expression: using smart boards, students have access to various tools to demonstrate their understanding of the concepts and have various options for interacting and manipulating learning materials.

In the same vein, Campbell and Kent (2010) believed that smart boards can facilitate learning and teaching processes and they have just become a must-have tool in classrooms nowadays. On the other hand, given the rapid evolution of technological

tools, their complexity, and the heterogeneity of learners' needs, the generalization of the impact of the use of technologies seems to be difficult (Alper & Raharinirina, 2006). In the related literature there are some studies that reported less favourable outcomes as regard to the use of interactive technological tools such as the smart board. For instance, Greiffenhagen (2000) discussed problems related to the utilization of smart boards which included limited development of the required teaching skills and insufficient training of the stuff involved with the use of smart boards; the waste of teacher time in the preparation and implementation of the smart board in lessons; limited student interaction driven by the prepared material and the use of inflexible teaching approaches when the smart board is in use; and there is a high probability that after a specific time span the smart board technology would lose its novelty value and teachers would return to use their old habits of teaching. In addition, Guimarães, Chambel, and Bidarra (2000) argued that existing technological tools used in classrooms may not be as flexible and responsive to pupils' needs as the use of conventional texts and board sustained teaching. The smart board hold no significant role in enhancing students' achievements (Hockly, 2013).

1.2 Problem Statement

As presented in the previous section, the available literature on the use of the smart board technology seems to be conflicted. On one hand, many studies have reported positive results over the smart board's use. On the other hand, some discovered negative sides or issues as a result of the implementation of the smart board technology. Moreover, most of the studies on the smart board use appear to be conducted within the context of various subject matter classes such as maths or geography. Regarding the perceptions of the pre-service teachers of English language about the use of smartboards, there seems to be a need for further research.

Furthermore, the classrooms in the newly refurbished building of the Faculty of Education at Eastern Mediterranean University (EMU), are all equipped with smart boards. Thus, students of the ELT program are now required to use smart boards in all class activities. However, this new demand might be adding an extra burden to them, which is worth investigating.

In addition, considering the individual differences and unique characteristics among the students of the ELT program, it is important to investigate their perceptions about the newly equipped smart boards (which have been installed for about one year since the launch of this study). What is more, these students are prospective teachers of English. In other words, upon their graduation, they are going to be teachers of English, who should be equipped with different knowledge types such as technological knowledge (TK), technological pedagogical knowledge (TPK) and technological pedagogical content knowledge (TPACK), in addition to the basic knowledge types such as content knowledge (CK) and pedagogical knowledge (PK) (Mishra & Koehler, 2006). Therefore, it is important to investigate how these pre-service teachers of English perceive the contribution of their experience, as students, with the use of smartboards to their future profession, i.e. teaching. To the best knowledge of the researcher, there are no (if any) studies conducted earlier that investigated this topic in the current research context.

1.3 Aim of the Study

The aim of this study is two-fold: The first one is to investigate the pre-service teachers' perceptions (their general evaluations, recognitions and interpretations) about the use of smart boards in their classrooms as students in the FLE department,

whereas the second aim is to explore their views about the integration of smart board technology in their future profession, as prospective teachers of English.

1.4 Research Questions

The current study attempts to address the following research questions:

1) What are the ELT students' perceptions about the use of smart boards in the ELT classrooms (as students)?
2) What are the ELT students' views about the use of smart boards in their future profession (as prospective teachers of English)?

1.5 Significance of the Study

The findings of the research are expected to provide useful feedback on ELT students' perceptions about the use of smart boards from two different perspectives: as students and as prospective teachers of English. If the results are positive, the instructors in the program may be advised to pay more attention to the use of smart boards by making more efforts to integrate them in their daily lessons more extensively; for example, by creating special content or by adjusting the curriculum to match students' perceptions about the smart board use. Moreover, the instructors may rely on smart boards to motivate their students and to promote collaboration.

The study is believed to be a basis for conducting more future research about the utilization of smart boards technology inside the university's classrooms. The study can also provide an evidence for the administrators to invest more in smart boards technology. They may consider equipping other faculties with the same technology to constantly evolve the current used technology in the future.

In addition, if the students' perceptions and views were found to be somehow negative or unfavourable, the instructors may develop alternative ways to motivate their students and create the appropriate atmosphere for the utilization of the smart board technology.

1.6 Definition of Key Terms

Information and Communication Technologies (ICTs): The term is usually referring to any kind of computation. It refers to a set of designed networks, software, services and devices (Christensson, 2010). It can be also described as a set of tools that supports access to various information repertoires. These technologies can provide various channels to disseminate, shape, register and store informational content. Examples of these tools are blogs, podcast, the web and digital slates (personal computer + multimedia projector).

Smart Boards (SBs): They are the devices that allow teachers and students to access computer applications and different information content inside the classrooms. They consist of a computer connected to a projector, which shows what is in the computer on a smooth and rigid surface, sensitive to touch, from which the computer can be controlled, make handwritten annotations on any projected image, as well as save them, print them, send them by email and change them to various formats (National Clearinghouse for Educational Facilities, 2011).

Technological Knowledge (TK): The knowledge of using various technological tools and resources, including general understandings of how to apply them in a productive and an appropriate way, to successfully build recognitions about whether they can facilitate or hinder the achievements and outcomes of the learners, and the

ability to adapt and develop new improvements and enhancements of those tools (Mishra & Koehler, 2006).

Pedagogical Technological Knowledge (PCK): The term refers to a connection made between three aspects; content, pedagogy, and technology, and how to integrate them successfully. A teacher would adapt the available didactic materials considering the previous knowledge of the students, the curriculum, his/her general technological knowledge, his/her vision of the evaluation process and pedagogy, etc. (Mishra & Koehler, 2006).

Technological Pedagogical Content Knowledge (TPACK): To know how to successfully integrate pedagogical techniques that use technologies constructively to teach content. (Mishra & Koehler, 2006).

Content Knowledge (CK): The general knowledge of subject matter and its related organizing structures (Shulman, 1987).

Pedagogical Knowledge (PK): The term is used to refer to teachers' specialized knowledge in organizing, facilitating and creating effective learning and teaching settings that are suitable for all learners; it also involves cross-curricular classroom management strategies and principles (Shulman, 1987).

Perceptions: Perceptions are our recognition and interpretation of sensory information which also include how we respond to this information. It is the cognitive process in the brain that humans use to understand their environment by interpreting and selecting information. It is the way in which someone perceives,

interprets and experiences his environment. It also involves selecting, organizing and interpreting stimuli by the observer to create a meaningful picture of reality (Bahamonde-Birke, Kunert, Link & de Dios Ortúzar, 2017).

1.7 Summary

The chapter presented the background information of the study, outlined the statement of the problem, aim of the study, research questions, and significance of the study. Lastly, definitions of the terms used throughout the study were listed. The next chapter provides a review of the literature regarding the use of the smart board technology.

Chapter 2

LITERATURE REVIEW

The utilization of smart boards in education has caught the attention of a great number of researchers; thus, the literature provides a vast amount of studies from a great variety of contexts, from primary to secondary and tertiary levels of education. Based on the previous studies in the field, the present study, more specifically, investigates the perceptions of the pre-service teachers of English as regards to their use of smart board technology as students, and explores their opinions about the possible role of smart boards in their future careers as pre-service teachers. The study, therefore, intends to bring together the participating pre-service teachers' current and future opinions about the use of smart boards in their current and future roles. The review of the literature here aims to discuss teachers' knowledge types and the integration of the smart boards in educational settings in general, by considering the related theories as well as the perceptions of the pre-service teachers. The chapter ends with a brief review of related studies conducted in the FLE department in EMU.

2.1 Teachers' Knowledge Types

According to Shulman (1986), teachers are required to develop three basic types of knowledge prior to get involved in the teaching process, namely content knowledge (CK), pedagogical knowledge (PK), and pedagogical content knowledge (PCK). Content knowledge is the knowledge of the subject matter and what is to be taught. Pedagogical knowledge involves how to teach and includes the knowledge about the teaching practices, strategies, methods and approaches, (such as how to prepare a

unit or manage a class). Pedagogical content knowledge is what and how to teach; the knowledge obtained from PCK allows teachers to know how to teach a subject to a group of learners in a specific context (Metzler, 2011). PCK can be also referred to as the ability to modify content and pedagogy with individuals, small and whole class groups of learners. It is highly required of pre-service teachers to review these three types of knowledge before planning or considering delivering any types of information to the students. With the emergence of technological innovations, the new millennium, and integrating the information and communication technologies into today's classrooms, teachers are now urged to develop other kinds of knowledge. Accordingly, other components of teacher knowledge include the following: a) Technological Knowledge (TK), which is the knowledge about technological resources and tools, including general understandings of how to integrate them into teaching in the most appropriate way; b) Technological Content Knowledge (TCK), which is the knowledge of how to integrate the educational technological tool within a specific content area; c) Technological Pedagogical Knowledge (TPK) which refers to the ability to connect content, pedagogy, and technology successfully; and d) Technological Pedagogical Content Knowledge (TPACK), which is what teachers need in order to teach a subject, teach it effectively by connecting to the appropriate pedagogy, and integrate the educational technological tool successfully. Accordingly, the relationship between the knowledge domains is complex and converged and no domain is different or distinguished from the other (Mishra & Koehler, 2006).

Despite the current technological innovations and developments, the use of information and communication technology by teachers is still somehow questioned.

Many researchers mentioned that instructors in different educational sectors have been using the educational technology irregularly, and their use is usually restricted to information displays or multimedia shows rather than facilitating learners' construction of knowledge (Gao, Choy, Wong & Wu, 2009; Ottenbreit-Leftwich, Glazewski, Newby & Ertmer, 2010). Therefore, teacher education programs are highly important in providing the required knowledge to the pre-service teachers to get them to teach effectively and fully integrate educational technology into their teaching (Sang, Valcke, Braak & Tondeur, 2010). Pamuk and Peker (2009) emphasized that training pre-service teachers to integrate the information and communication technology into education is a crucial factor for teachers to use the technology in their future career. Teacher education programs related to the use of technology are thought to help teachers to obtain rich experiences in technological knowledge (UNESCO, 2008). Pre-service teacher education is significant in equipping the pre-service teachers of the required knowledge to effectively use the information and communication technology in the classroom (Gao et al., 2009; Lim, Chai, & Churchill, 2010). According to the literature, pre-service teachers who have obtained higher levels of skills in technological integration are more confident and willing to use technology more often in their classrooms (Paraskeva, Bouta, & Papagianni, 2008).

Preparing pre-service teachers for proper information and communication technological use is a key focus to teacher education facilities (Hammond et al., 2009). Many studies investigated the efficacy of different approaches to develop technological pedagogical content knowledge throughout teacher education courses related to the integration of technology. Researchers followed an assessment

approach that involved an exposure to before and after special research settings related to technology use. Koh, Chai, and Tsai (2010), for example, conducted a study targeting a number of 365 pre-service teachers of an education program to obtain postgraduate diploma. The researchers presented their surveys before and after completing a three-credit educational technology course. The results proved that the prospective teachers gained significant amount of knowledge in content knowledge, pedagogical knowledge, technical knowledge, and technological pedagogical content knowledge. The results also suggested that the pedagogical knowledge has the largest impact on technological pedagogical content knowledge.

A similar research study was conducted by Hu and Fyfe (2010), which involved pre-service teachers. The teachers were enrolled in a postgraduate teacher course that was intended to be an entry preparation program to the teachers. Technological pedagogical content knowledge principles were included in the course as a series of problem-centred task designing. A survey was presented to the teachers before and after the program. The findings indicated that the teachers' ability and confidence increased remarkably in combining technology with pedagogy and content.

The pre-service teachers need to be provided with the types of knowledge that they need in their future career. Most importantly, the one size fits all approach is not favoured anymore; thus, teachers are urged to evolve to modern ways of teaching and develop teaching strategies that match their students' needs. In addition, pre-service teachers are demanded to acquire the knowledge and skills that are essential to the integration of information and communication technology in their pre-service process of learning. Also, they are expected to be able to apply this knowledge in

their current educational period and in their future profession (Yapıcı & Hevedanlı, 2012).

2.2 Smart Board Technology and Related Theories

Based on the literature, the integration of smart boards technology is driven by three major theories; the theory of constructivism, the sociocultural theory, and the social theory of learning. The three theories are highlighted by researchers when investigating the use of smart boards. The theories are believed to contribute to create a better learning environment with the help of the technological tool. The three theories are emphasized below.

The theory of constructivism states that knowledge is constructed and not discovered. Students construct their knowledge from their own way of being, thinking and interpreting information. From this perspective, students are responsible beings who actively participate in their learning process. Driver and Oldham (1986) highlighted that the constructivist way of learning put an emphasis on the learner's active role. This active role is based on the following characteristics of the constructivist theory: a) The importance of students' background knowledge, motivations and beliefs; b) The establishment of relationships between knowledge for the construction of conceptual semantic arrangement of memory contents (construction of networks of meaning); c) The capacity to construct meanings based on restructuring the knowledge that is acquired according to the previous basic conceptions of the subject; and d) Students self-learn by directing their abilities to certain contents and by constructing the meaning by themselves of those contents that must be processed.

The constructivist theory allows to orient the teaching and learning process from an experiential perspective, in which fewer verbal messages from the teacher (mediator) and greater student activity are recommended. The theory is based on the belief that learning is active, knowledge construction should be delivered as a passive process and learning should be an active process based on students' cognitive development (Hoover, 1996). The theory of constructivism refers to the human being as an active constructor of his own reality. Therefore, knowledge is a process of construction of the human being; every person perceives reality, organizes it and gives it meaning which contributes to the construction of a coherent whole that gives meaning and uniqueness to reality. The theory is perceived as a dialectical interaction between the knowledge of the teachers and their students, who enter discussion, opposition and dialogue, to lead a productive and significant process of learning.

This theory is usually referred to by researchers who study the smart boards technology (Ferris, 2010; Ling, 2014; Riska, 2010). Researchers use the theory of constructivism to build on the consumption that technological aided instruction can help to generate an approach of student-centred learning (Ling, 2014). It was observed that technological instruction has a great impact on achieving a student-centred model of teaching. Ferris (2010) and Riska (2010) reported on students who were able to construct new forms of understandings and build knowledge by interacting with each other, with the help of the technological tool and their teacher. The researchers concluded that the major observed changes were occurring in the learning and teaching process because the students were active in using the smart board technology. The teachers presented various materials with the aid of the smart board which helped to construct students' current knowledge and understating.

The sociocultural theory draws mainly from the perspective of all human actions are mediated by tools; examples of tools are any artefact such as papers, books, computers, or pens, or any semiotic systems (for instance, diagrams and graphs). Within this context, learning is an active participation of learners with the environment that surrounds them (Cole & Engstrom, 1993; Vygotsky, 1978; Wertsch, 1991;). Vygotsky (1998) describes the cognitive development as the fruit of the process of collaboration. Accordingly, social interaction will enable the children to develop their learning, and activities carried out in a shared way can allow the children to internalize the thinking and behavioural structures of the society that surrounds them. As a result, the students are believed to acquire new and better cognitive skills as a logical process of their immersion in real life situations which constantly require their collaboration and interaction. In this regard, learners and instructors involve in a local culture (i.e., the classroom) which is affected by local, national and global factors. Thus, the instructors and learners would bring a history of experiences to the classroom which is related to their previous background of learning and tool use. The sociocultural theory of learning is related to the usage of the smart board technology in a way that students will draw on their out of school usage of information and communication technology which will have its impact in the classroom. Similarly, teachers will make sense of new technologies inside the classroom and integrate them by relating to their previous experiences and knowledge of older technological tools (Facer et al., 2001; Kent & Facer, 2004).

In addition, Parmeter (2012) elaborated on the sociocultural theory of teaching when using the smart board technology, the theory is merely considering literacy knowledge to be achieved and developed by tools that both teachers and students use

daily. Thus, integrating the right technological tools into teaching instruction can help in supporting and shaping the meaning of literate from the society's own perspective. Furthermore, incorporating smart boards in the learning process and into teachers' and lesson's instruction can help in creating an interactive environment. Interaction is mediated by participation, cultural, historical and social contexts (Larson & Marsh, 2005).

The theory of social learning is derived from the work of the Canadian psychologist Albert Bandura, who presented a different theory than the ones explained by behavioural psychologists, who, as Bandura himself claimed, underestimated the social dimension of human behaviour. According to Bandura (1962), we learn behavioural patterns in two different ways: i) direct way learning which is learning by own experience; or by ii) vicarious way of learning which is learning by observing the behaviour of other people. Thus, Bandura believed in the behaviour as a crucial impact on learning, and also as an influence on people's own behaviour. As a matter of fact, according to this theory, behaviours of a certain complexity can only be learned through examples or by the influence of behavioural models. As stated by Bandura, if the appropriate behaviour models are introduced, the individual will be able to imitate them.

The theory's key element is that we are unable to understand our behaviour if we do not consider the influence of aspects of our environment on us. Bandura emphasized that the learner is not a passive member in the process of learning, instead, he is an active participant and has his own expectations. Therefore, the cognitive factor must also be taken into consideration. According to this theory, for a person to learn, they

must go through four fundamental phases: 1) the first phase is attention, if you want to learn something by observation, it is essential to pay attention; 2) the second phase is retention, that is, the ability to store the information acquired in the observational phase; 3) the third phase is the importance of reproduction, or in other words, the ability to recreate the previously observed model of learning; and 4) the fourth phase is motivational phase. According to Bandura, to be successful in learning, we must put all our efforts. It is very complicated to learn without motivation.

The social theory is believed to help in creating a better learning environment when integrating the smart board technology. Integrating the smart board technology can help in shifting the learning process to a collaborative activity because learners interact with each other to build their understandings, to construct their beliefs, to seek for knowledge, and to boost their skills (SMART Technologies Inc., 2006). In this context, Mohamed and Singh (2012) used the theory to develop their research to investigate learners' perspectives in the learning and teaching of science when using the smart board technology. The participants were 12 teenage students from three public secondary schools in Penang, Malaysia. The study adopted a qualitative approach and the main data collection tool was focused group interviews. The interviews were a total of 12 sessions each of which lasted one hour. All the sessions were video recorded, and then transcribed. The results indicated positive feedback from the students. There was an increased classroom interaction among the students when using the smart board technology. Students' motivation levels increased. In addition, the students enjoyed moving objects to solve puzzles and answering questions by using the touch screen.

In brief, the three theories seem to have a key component, that is, student interaction. The theories involve the learner in a collaborative environment to boost students' motivation and to enable the learners to take part in an active experience. However, the theory of constructivism, which is concerned with constructing knowledge and building new forms of understating based on our previous knowledge and background and creating an active environment for learning is believed to be a fundamental part when dealing with the educational technology. According to Mun and Abdullah's (2016), the theory of constructivism is the leading theory among researchers when integrating the smart board technology.

2.3 The Adoption of Smart Board Technology in the Educational Setting

In order to survive in this competitive era, of the 21st century, whether to integrate technologies into educational settings or not is no longer an option nor a choice but rather a must. The 21st century is challenging the professional teachers in all educational domains and questions the traditional teaching and learning strategies (Silva, 2009). Accordingly, instructors are demanded to reform their conventional teaching habits to promote collaborative learning and critical thinking practices. To put it differently, interactive technological tools like the smart boards are believed to require teachers to abandon their old-fashioned teaching practices and evolve to more innovative ones.

The use of smart boards was first known in business presentations; then, they were adapted in higher education and started to become more popular in primary schools by the year of 1990 (Stephens, 2000; Moseley et al., 1999). Moreover, English language teaching (ELT) classes welcomed smart board technology in the early

2000s. The British Council was one of the first leading organizations that started equipping their language classes with the new technology. Similarly, many language centers updated their traditional boards with smart boards to be considered up to date and to be seen integrating the latest educational technology available (Dudeney & Hockly, 2012). The new technology was thought to be beneficial in enhancing the learning and teaching process.

The emergence of smart boards into today's classes promoted researchers to investigate their effectiveness and to shed light on students' perceptions and attitudes towards the technological tool. As pointed out by Joyce, Calhoun, and Hopkins (1997), and Tuohy (1999), teachers are required to respond to students' learning styles and needs, and effective teaching is responsible to comply to the diversity of the group being taught. In this regard, researchers investigated students' and teachers' perceptions regarding the use of smart boards technology (Higgins, 2003; Higgins et al., 2005). A great number of studies revealed positive results, and teachers found the technology overwhelmingly beneficial for the students and for themselves as teachers, as well (Almajali, Abdallat & Shamayleh, 2016; Aytac, 2013; Glover & Miller 2001; Yapici & Karakoyun, 2016; Miller, Glover, Averis & Door 2004). Furthermore, the smart boards are an example to interactive educational technological tools which are believed to enhance the teaching and learning process. Glover, Miller, Averis and Door (2005) emphasized that students' collaboration can get tremendously decreased if teachers are not using any mnemonic strategies like visuals, sounds or videos, especially when teachers are stuck on the use of their old traditional whiteboards or classical blackboards. Swan, Schenker and Kratcoski (2008) reported on teachers who integrated the technology of smart boards in their

classrooms; they expressed positive results and successfully achieved active learning and effective student participation during their lessons. Teachers also believed that their lesson planning and design were enhanced and improved.

In another study, Twana (2017) examined teachers' and students' attitudes toward using smart boards in Ishik schools in Northern Iraq. A quantitative approach was used via distributing two different questionnaires to 270 students and 30 teachers who studied/taught at Ishik schools at the time of the study. The data were analyzed by using descriptive statistics which included One-Way ANOVA and LSD tests. The results indicated that the attitudes of both teachers and students were positive; however, significant differences were identified based on the level taught/studied. Additionally, teachers' lack of training, technical and electricity problems were pointed out as the major issues that they faced.

2.3.1 Potential Advantages of Smart Boards

Based on the reviewed literature, a considerable number of benefits was identified when smart boards are used. Glover and Miller (2001) believed that smart boards are more convenient for creating an environment of whole-class teaching; more specifically, for delivering a variety of visuals and conveying successful demonstrations inside the classroom. In other words, smart board technology provides an instant access to various materials from a variety of numerous resources.

The technology is favoured for enabling smooth transitions within a lesson between different activities and revising previously prepared lessons and materials (Virtual Learning, 2003). Maddux, Johnson and Willis (2001), and Latham (2002) added that using smart boards can help meet the learning needs of a wider range of learners;

moreover, smart boards enable the adaptation of multiple multimedia resources such as pictures, sound, written texts, videos and diagrams in daily lessons (Ekhami, 2002; Levy, 2002).

As emphasized by Cox et al. (2003), information and communication technology has the potential to match the process of teaching to meet students' learning styles and provide flexibility in the teaching process. Therefore, the learning process can be enhanced by using interactive white boards through programmed multimedia materials and links. Smart boards are also considered attractive to students and teachers and are believed to increase students' motivation and attain their attention (Ball, 2003; Beeland, 2002; Kennewell, 2004; Smith, Higgins, Wall & Miller, 2005).

Smart boards are playing a major role in deepening students' understandings by enabling them to respond to various activities and help teachers to create new ways of representing concepts and ideas which can also lead to smooth lesson transitions. Furthermore, lessons' timing pace is quickened by not relying on writing on a traditional board and accomplished by using already prepared materials (Ball, 2003; Edwards, Hartnell & Martin, 2002; Glover & Miller, 2001; Latham, 2002; Miller, 2003; Richardson, 2002).

According to Smith et al. (2005), smart board technology is favoured by most teachers because they are considered easy to use, especially when connected to the Internet. Other related benefits include reducing teachers' workload by enabling resource sharing amongst teachers and staff, and the advantage of saving and reusing created materials which leads to recycling of materials and resources over a series of lessons (Glover & Miller, 2002; Kennewell, 2004; Walker, 2002).

Another benefit of the smart board technology is related to the tool being user friendly and its easy maintenance. Teachers have the privilege to use any teaching approaches, methods or tools that they feel better suit their pupils (Minor, Bracken, Geisel & Unger 2006; Teo, Wong & Chai, 2008). Smart board technology plays an important role in shaping the process of learning into a social activity where everybody is well engaged and strengthening their beliefs and understanding by initiating discussions and asking questions (SMART Technologies Inc., 2006).

Many studies highlighted the smart board's ability to achieve effective collaboration among the students and promote active learning. Apparently, integrating the smart board can help to accomplish successful student involvement, especially when applying the theories of social learning and active participation. Aytac (2013) accounted using the smart board technology resulted in supporting students' interaction and collaboration inside the classroom and provided a better environment of collaborative teaching and social learning. In the same vein, Graham and Santos (2015) believed that student involvement and participation were increased when using mnemonic strategies or techniques; furthermore, a combination of those techniques and visuals, sounds, colors and images were seen to boost student comprehension (Graham & Santos, 2015).

Overall student performance was also believed to be enhanced when integrating the smart board technology. Almajali et al. (2016) explored integrating the smart board technology to teach a course of social studies (i.e., National Education) in governmental schools in Jordan and investigated their effectiveness. The participants were 60 males and 69 females, all were tenth grade students enrolled in public

schools in Tafila area, in Jordan. The sample was divided into two groups: an experimental and a control group. The students of the control group were taught using the traditional board and printed materials whereas the experimental group students were taught using the smart board technology using special content and materials. The research study lasted for eight weeks and the main instrument of collecting the data was a pre and post examination of students' achievement. The results revealed an average of enhanced performance and achievement among all the students of the experimental group. Accordingly, using smart boards' programs and presentations facilitated students' understanding and conceptual restructuring.

In addition to the previous studies, the study of Shams et al. (2016) also indicated positive results to the smart board use. The research was developed to investigate students' attitudes towards using the smart board technology in the English as a foreign language classroom in Iran. The participants were 60 students from two different high schools, 30 students were using the technology in their daily classes while the other 30 students were taught by traditional blackboards. Data was collected by observation sessions, a questionnaire and interviews. The study mainly focused on investigating students' level of interaction and participation, motivation and retention when using a smart board. The results indicated the following: 1) when the tool was used effectively, the students were found to interact more in their daily classes; 2) students' retention of various information was enhanced; 3) students' general level of interest in the presented material and their overall motivation towards the course were boosted.

Finally, Yapici and Karakoyun (2016) reported on students who experienced better learning outcomes and more enjoyable lessons when they were taught using a smart board. The students felt more confident and started to have more fun and be motivated during the lessons, and they experienced an enhanced overall learning process. These benefits were also highlighted in Tataroğlu and Erduran's (2010) study in which smart boards were found to be effective in boosting students' interest in the presented material and facilitating their learning to achieve better learning outcomes.

2.3.2 Potential Drawbacks of Smart Boards

There is no doubt that integrating technological tools inside today's classrooms is believed to be important and highly recommended; however, the process may fail due to some factors. Levy (2002) reported on teachers who faced technical difficulties during their lessons when using smart boards, which resulted in the need to a rapid intervention for troubleshooting support. The problems included networking issues, nonexistence response or slow motion from electronic pens, unresponsive screen or awkward movement of multimedia.

One of the rising issues when using smart boards was the lack of proper training. This problem was spotted out by both learners and instructors. Levy (2002) reported on teachers and students who were concerned about potential lesson interruption and disruption when there were technical issues while the technological tool was used. Accordingly, these issues prevented to use the tool properly. Walker (2003) interviewed teachers about their use of the smart boards technology and highlighted that some teachers thought that the tool was tremendously helpful at the beginning but their enthusiasm shortly waned due to their frustrations about lacks in

methodological training and practical instruction. Teachers thought that more training in technical pedagogical instruction was needed to allow them to use the smart board technology to its full potential.

Furthermore, lesson planning and preparation consumed longer periods of time when dealing with smart boards, and teachers needed to be more experienced and made greater efforts to meet the appropriate level of technical knowledge to work with smart boards (Ball, 2003; Glover & Miller, 2001; Levy, 2002). Moreover, without proper knowledge of the integration of smart boards into education; using smart boards may have resulted in delivering a teacher-centred style of teaching. Accordingly, the lessons that the students believed to be more positive were the ones where the teachers used the smart boards to generate interactive aspects in the class rather than using the technology to present excessive information resources and multimedia content most of the time (Beeland, 2002). Cogill (2003) found that presenting information using smart boards was somehow confusing to the students; moreover, smart boards were not used interactively most of the time (Knight, Pennant & Piggott, 2004).

Other identified drawbacks or disadvantages of smart boards technology included complaints about their cost which was considered relatively expensive, as well as difficulties to set up, maintain or to deal with their software especially if they were out of use. Another reported problem was finding the right spot or the appropriate height to install the equipment for their use by the pupils due to seating positioning or lighting (Brown, 2002; Smith et al., 2005).

Considering the effect of using smart boards on students' learning, Moss et al.'s (2007) study pointed out some of the drawbacks of using the smart board technology. The study involved both students and teachers and the results showed that the smart board showed no significant impact on students' performance. The researchers expressed that the smart board technology was usually welcomed by students and teachers, but any potential benefits or gains were restricted to their proper use. Teachers in the study felt the use of smart board technology extremely varied according to the nature of subject areas and the knowledge of teachers. For example, the tool was believed to be more effective when used in science studies such as mathematics or biology rather than in social studies such as history.

Similarly, according to Lewin, Somekh, and Steadman (2008), technology integration in classrooms was restricted to numerous factors that can lead to its failure or success. Among these factors were those related to teachers' pedagogy and teachers' current level of professional development (Darling-Hammond & Richardson, 2009). As Martin (2009) pointed out, educators were demanded to participate in appropriate professional development programs to empower themselves with new technological skills.

In addition, Hadadi, Abbasi and Goodarzi (2014), and Miller and Glover (2002) showed less positive results to the smart board use. Hadadi et al. (2014) conducted a study about the use of smart boards in English language classes and their effectiveness in developing competencies in implementing a communicative language teaching approach. The study involved 11 teachers with their students from two secondary schools in Iran. All the teachers were new to the technology at the

beginning of the school year. The data was collected from the teachers by means of classroom observations, video recordings of lessons, in depth interviews, field notes and reflective dialogues; students were also interviewed to measure the experienced effectiveness of teachers' instruction. The findings suggested that the use of smart board technology was not the key element in developing collaboration among the students. The results indicated that the key driver for student collaboration and involvement was teachers' ability to generate meaningful tasks and activities and their efforts to promote discussions and create an environment for collaboration.

Furthermore, an elaborated research study was conducted by Miller and Glover (2002) to investigate the use of the smart board technology and their potential as a 'force' for pedagogic change. The study, which was funded by Keele University, involved five elementary schools in an English education authority in the UK. All students, teachers and staff members who were involved with the use of smart boards were included in the study. Data was collected by means of surveys of teachers and students, classroom observations, and two tests to determine students' achievements. The research involved developing special software and curriculum intervention when needed and evaluating the used materials. Furthermore, the researchers observed some strategies or uses to the smart board that may enhance teachers' materials and students' interaction with each other. These techniques included colouring, highlighting and shading, matching, hide and reveal, giving relevant feedback, drag and drop, identifying animations or movements on the board. Accordingly, the researchers mentioned that the identified techniques were supposed to support pupils' learning only if they were successfully implemented in lessons and in conjunction with the material, but this condition was not always successfully

achieved. Furthermore, the study suggested three phases of development that occur on the pedagogical level which are thought to be essential in teaching with the use of smart boards technology. The first stage is 'didactic support', which means that smart boards are used to improve traditional board teaching. The second stage is 'interaction', which involves the teacher attempting to stimulate his/her pupils who are being engaged interactively during the lessons by answering their teachers' questions and getting involved with various activities. The third stage is 'interaction enhancing', which is the switch that occurs to move from giving instructions, to the students being involved and with the technology acting as a stimulus, and it also indicates the development and integration of interactive learning. In addition, the researchers concluded three conditions that needed to be met to get potential benefits of the smart board use: a will to use and develop the technology; the development of materials required the teachers to be mutually interdependent, and; a change of thinking was needed in which the way that the classrooms activities are resourced. The study also concluded that technology is only a tool that may help teachers to reach their goals, and good teaching is good teaching, whether with or without technology. They also recognized that this technology should not be considered as an end in itself, but rather as a means.

In conclusion, introducing technology does not always guarantee better learning outcomes or learning opportunities. Using smart boards may enable teachers with the opportunity to deliver a variety of information in more effective methods; however, this cannot automatically guarantee or suggest that students' learning environments are enhanced. Moreover, teachers' role and their level of knowledge of the used

technology and how to use it are crucial factors to determine their usefulness and successfulness to support the learning process (Thomas, 2010).

2.4 Pre-Service Teachers' Perceptions about the Use of Technology

The use of technology in today's education is a challenging and a complex process. It is not enough to equip the schools with information and communication technologies because these tools cannot create a better learning environment or improve the quality of education and instruction by their own. A broader vision should be grasped by considering the current available resources, practices, and teaching programs (Gülbahar & Güven, 2008).

Investigating the pre-service teachers' perceptions regarding the use of technology is a significant factor to understand their own thoughts and ideas which can result in a better integration of the technology; furthermore, knowing what teachers think or feel about the technological tool can also help in creating special programs to help them master its use, and to get the full potential of those tools. To this end, Campbell and Martin (2010) investigated the perceptions of pre-service teachers on using the smart board technology in education and in their classrooms. Their findings pointed out that equipping the classes with the smart board technology is not enough; thus, integrating suitable instruction of technical pedagogical knowledge can help in getting positive outcomes from using the smart board technology. The participants highlighted that the integration of technology into education is significant, but teachers are required to link pedagogy with technology which need proper training and special teacher education programs.

In another study, Akbulut, Odabaşı and Kuzu (2011) reported that pre-service teacher education training programs did not provide enough knowledge and opportunity to equip the teachers with an effective and successful integration of information and communication technologies. This has been highlighted in Bozdoğan and Özen's (2014) study which emphasized that it is crucial for pre-service teachers to have hands-on experiences with technology in their pre-service teacher education to facilitate the learning and teaching process, and to observe and make best practices of technology integration as students and in their future careers. According to the involved pre-service teachers in their study, pre-service teachers need more learning opportunities to help them become competent in using the information and communication technology in their courses.

A similar study with a wider scope was launched by Aslan and Zhu (2015), who investigated the perceptions of pre-service teachers about the integration of interactive and communication technology in teacher education in Turkey. The selected teachers were mainly majoring in social sciences, elementary education, and Turkish language. The study followed a mixed methods approach of research and involved a total of 782 pre-service teachers from six state universities. The data was collected by presenting a survey to the participants and interviewing fifteen pre-service teachers. The results highlighted the pre-service teachers' own perceptions and identified major issues when dealing with the educational technology. The findings can be summarized as follows: 1) the participants of the study perceived the information and communication technology as highly important to their careers and indicated a positive attitude towards their use in general; 2) it is important to make the classrooms smaller in size to enable the teachers to involve all the students and to

get a better integration of the smart board in education, 3) according to the pre-service teachers, major problems and power failures could be prevented by enhancing the visual and audio equipment of the classrooms; moreover, a proper technology integration could be achieved by equipping the educational facilities with quick access to hardware and software technical support, 4) more practice is needed to be applied in the current technology-related courses with providing extended details and increasing the course hours to help in integrating the information and communication technology; moreover, content knowledge integration into the current technological courses should be made; 5) academic instructors should be competent in dealing with the technology; the teaching of courses and their designing and planning was highly affected by the educators' competence in using the technological educational tools; 6) it was observed by the pre-service teachers that the less competent the instructors in using the technological tool, the less they focused on instructional technological aspects of the tool such as creating an active learning environment for the students, and they seemed to move more often to material aspects instead, such as slide and visual shows; 7) the pre-service teachers stressed on the importance of pedagogical knowledge when integrating a technical educational tool. The teachers believed that it is not enough to be competent in information and communication technology and that pedagogical knowledge is a significant component of technological integration in education.

In a more recent study, Liu, Lin, Zhang and Zheng (2016) explored the perceptions of the pre-service teachers about the use of educational technology and the barriers that might hinder them from integrating the technology. The research study followed a qualitative approach, and group discussions were the main tool of data collection.

A total number of 47 pre-service teachers of Chinese language in an American university were involved. All the pre-service teachers were part of a teacher education program and participated in extended group discussions (after 1-hour workshops) to integrate technology with language teaching. The researchers highlighted the barriers that the pre-service language teachers face during their experience with using the technology as follows: a) external barriers: lack of resources, difficulty to access to technology, lack of proper assessment, and lack of parental support; b) internal barriers: pedagogical beliefs, and lack of knowledge and skills.

2.5 Related Studies Conducted in the EMU Context

In recent decades, the educational process has been almost completely transformed, thanks to the implementation of educational technology as a tool to help in achieving the teaching and learning process. However, it is very common at this point that there are still contradicting viewpoints whether technology really helps or impedes the intellectual or academic development of a student. For those reasons, the theme of technology has been investigated extensively in the Foreign Language Education Department at Eastern Mediterranean University as well. Some of the studies conducted in this research context are reviewed below.

Küfi (2008) explored the perceptions of the English language teachers about the implementation of an interactive web environment to promote professional development. The participants were English language teachers of the modern language division from General Education Department at the EMU. The research was a caste study conducted in a form of an action research and involved using the qualitative approach to collect the data. The main method to collect the data was

interviewing the teachers. Moreover, the data was analysed through content analysis. The results revealed that the teachers became more aware of their capabilities in directing their own professional development. Furthermore, the teachers discovered that they are in a better position to implement constructivist principles in their learning and teaching. In addition, the teachers reported that they can turn into a bottom-up approach to professional development instead of a top-down when implementing an interactive environment.

Güdücü (2016) investigated the use of smartphones by the EFL learners enrolled in the English Preparatory School of EMU and explored their possible effect on learning vocabularies. The research was experimental and used a mixed methods research design. Moreover, a background survey was administered to decide on which phone app to use. The participants were 60 in total and all shared the same level of proficiency (i.e. intermediate). The study involved creating two research groups; the experimental group received a list of vocabulary items using WhatsApp for ten days while the other group received the same vocabulary items in a handout. Tests were presented to the students before and after the treatment to examine their achievements. The findings showed that the EFL students used their smartphones for a variety of purposes. Also, it was concluded that the students learned the vocabulary items better using their smartphone, and more specifically by using WhatsApp.

Pourabad (2016) examined the undergraduate students of the ELT program and explored their attitudes towards the utilization of Mobile-Assisted Language Learning (MALL) devices. The focus was on MALL's applications inside and outside the EFL classroom. The research study aimed at identifying the usefulness of

MALL's devices and applications as potential learning materials and their possible limitations. Furthermore, the study involved collecting quantitative and qualitative data through filling out questionnaires and answering interview questions. The findings indicated that the students were positive about the implementation of MALL and that the devices can provide them with learning opportunities. In addition, the students reported on the importance of MALL devices to keep them in touch with their peers and instructors. However, some limitations were identified like the lack on internet connection at the department or insufficient digital literacy.

Ali (2017) explored the perceptions of both instructors and students regarding the use of PowerPoint presentations in ELT classrooms. The study also aimed at identifying any differences between the perceptions of the graduate and the undergraduate students. Moreover, a mixed methods approach was applied which involved the collection of both qualitative and quantitative data. The participants were 108 in total and included the graduate and undergraduate students and 10 instructors. The findings indicated that both the students and instructors had positive perceptions as regards the use of PowerPoint presentations; however, their preferences varied extensively.

Finally, Banaeian (2019) investigated the effect of implementing a teacher robot on ELT students' vocabulary learning and the study also explored their attitudes towards it. The participants were the first-year students enrolled at the ELT undergraduate program. Moreover, the study involved the students to be divided into two research group. Furthermore, a NAO Robot (which is a humanoid robot manufactured for the purpose of research, education and entertainment) was used in vocabulary courses.

The study adopted a mixed methods approach where surveys and interviews were the main data collecting tools. The findings indicated that the performance of the control group was better compared to the experimental group. However, the students felt positive in general about the use of the robot and suggestions were made to use the technology in better beneficial methods with identifying its limitations.

2.6 Summary

In this chapter, the theories related to the use of smart board technology were emphasized with a focus on their use into today's classrooms, then, their benefits and drawbacks were explored by presenting the relevant studies about the integration of the smart board technology. The types of teacher knowledge were also identified, and teachers' perceptions were investigated from the available literature. In the following chapter, the method and research design of the study are explained.

Chapter 3

METHODOLOGY

This chapter outlines the overall research design, the context and participants of the study, data collection instruments and procedures, data analysis, as well as the ethical considerations of the study.

3.1 Research Design

The study adopted a mixed methods approach where both quantitative and qualitative data were gathered. Denzin and Lincoln (1994) describe the qualitative research design as a method to study things in their natural settings to interpret or make sense of the meaning brought by people about a certain phenomenon or behavior. The qualitative approach involves the use of different types of data collecting tools, such as observations, interviews and open-ended questions. The quantitative research method allows the researcher to get the facts regarding the aim of the research (Bel, Bryman & Harley, 2018). According to Babbie (2010) and Muijs (2010), the quantitative method of research can be defined as a statistical analysis of data collection, or an emphasis made on objective measurements, such as surveys and questionnaires (Dörnyei, 2007). Moreover, the qualitative approach is described as the process which involves collecting open-ended and non-numerical data (for example data gathered by means of structured interviews) that will be later analysed by non-statistical procedures such as content analysis. Furthermore, Dörnyei (2007) highlights the mixed methods approach as the process that involves collecting both types of data, i.e., quantitative and qualitative data.

The data collection process involved a methodological triangulation approach, that is, using more than one method to collect the data. Webb, Campbell, Schwartz and Sechrest (1966) are among the first researchers who introduced the triangulation approach into the field of social sciences. Accordingly, involving multiple approaches to answer a research question allows the researcher to put an emphasis on the needed information or the sought answers. Blaikie (1991) explained the need to a triangulation approach as the desire to overcome problems of validity and bias.

In addition, the design of this study and the involved context (i.e., the FLE department in EMU) contributed to make it a case study. Case studies are conducted for the sake of investigating one single context in order to investigate the different outcomes in the light of certain conditions (Stake, 1995). The findings obtained in a case study can be used as insights for other similar situations and cases; however, it may not be always possible to generalize the results (Nisbet & Watt, 1984). Accordingly, a case study is described as an empirical research which answers questions of how and why in relation to a certain context.

In brief, this study is a case study which follows a mixed methods approach. Moreover, a triangulation of methods was applied by presenting a questionnaire and semi structured interviews to elicit participating students' perceptions about the use of the smart board technology both as students and prospective teachers of English.

3.2 The Context

The study aimed at investigating the perceptions and exploring the views of the current students enrolled at the undergraduate program of the English Language Teaching (ELT) about the use of smart board technology in their classes; from two

different perspectives, as students and as prospective teachers of English. The study took place at the Foreign Language Education Department (FLE) in the Education Faculty, Eastern Mediterranean University (EMU), located in Turkish Republic of Northern Cyprus (TRNC). Eastern Mediterranean University is the only state university in TRNC and has been providing higher education in TRNC since 1979 with all its programs accredited by the Turkish Higher Education Council (YÖK) (https://www.emu.edu.tr/north-cyprus-universities).

The Faculty of Education at EMU was opened in 1999 and since then, has been educating teachers of various subject matters. The faculty is home to eight departments; In these departments 15 undergraduate, 10 postgraduate, and 2 PhD programs are offered. The number of the current enrolled students is 1928 and the number of graduates is 6714 (https://www.emu.edu.tr/en/academics/faculties/faculty-of-education/706).

The department of Foreign Language Education, where the study was conducted, is an institutional member of two major professional organizations, International Association of Teachers to Speakers of Other Languages (TESOL), and International Association of Teachers of English as a Foreign Language (IATEFL). The FLE department was accredited by AQAS-Agency for Quality Assurance through accreditation of Study Programs based in Germany. There is an undergraduate program leading to the Bachelor of Arts (B.A.) degree in ELT (which currently accommodates 145 students), 2 postgraduate programs (with thesis and project-based) leading to the Master of Arts (M.A.) degree in English Language Teaching, as well as a postgraduate program leading to the Doctor of Philosophy (Ph.D.) degree in

English Language Teaching (https://www.emu.edu.tr/en/academics/faculties/faculty-of education/department-of-foreign-language-education/1147).

3.3 Participants

The participants of the study are the current B.A. students (i.e., pre-service teachers) enrolled in the ELT program at the FLE department, EMU; representing all four years (freshman, sophomore, junior, senior) of the program. Although the goal was to reach all the current students enrolled in the undergraduate program, only 102 students out of 145 volunteered to participate in the study; however, only 100 students returned the questionnaires. Therefore, the total number of participants is 100. The technique used in this study was convenience sampling (also called availability or opportunity sampling) which involves selecting a non-probability/non-random sample. As stated by Farhady (1995), the method enables the researcher to choose whoever is available (of the research population) and is willing to take part in the study. According to Dörnyei (2007), convenience sampling is the most common type of sampling in second language studies.

As regards the participants' gender, as shown in Table 3.1, 58% of them were females and 42% males. The age range of the participants was classified into three options in the questionnaire: a) 17-19 years old, b) 20-24 years old, and c) 25 and above. 70% of the students choose the second option of 20 to 24 years old; 27% of the students were 17-19 years old; and 3% of the students went with the third option, 25 and above.

Table 3.1: Demographic Information of the Participants

	Frequency	Percentage
Gender		
Male	42	42%
Females	58	58%
Age		
17-19	27	27%
20-24	70	70%
25+	3	3%
Nationality		
Turkish	35	35%
Turkish Cypriots/Cypriots	40	40%
Others	25	25%

In terms of the participants' nationalities, 35 respondents were Turkish, about 29 students expressed that they were Turkish Cypriots, and 11 students were Cypriots. Other nationalities included British, Kazakh, Kyrgyz, Turkmen, Kurdish, Bosnian, Gambian, Eritrean, Syrian, Palestinian, Egyptian, Bahraini, Kuwaiti, and Libyan.

Table 3.2: Participants' Experience with the English Language

Number of years	Frequency	Percentage
1-5	24	24%
5-10	36	36%
10+	40	40%

The participants' experience with English language and the number of years that they have spent in studying the English language were also examined. As shown in Table 3.2, around 40% of students have been studying the English language for more than 10 years, 36% have been studying the language for about 5 to 10 years, and only 24% of the respondents have been involved with the English language for about 1 to 5 years so far.

In addition, 14 students volunteered to participate in the interviews. These students represented all four years. In reporting their perceptions in the following chapter, pseudonyms were given to each student to keep their privacy. Moreover, the interviews were held mostly after completing daily classes (i.e., in the afternoon period) at the Education Faculty. All the participants were ensured (via consent forms) and by explaining to them in person that their participation was completely voluntary.

3.4 Data Collection Instruments

As was clarified earlier, a questionnaire was presented to the students and semi structured interviews were held to collect data from the participants on the research questions. The survey aimed to collect quantitative data while the semi structured interviews addressed the qualitative aspect of the study.

3.4.1 The Questionnaire

A questionnaire is a tool for collecting data when conducting a research and can be defined as a "means for gathering information about the opinions characteristics, or actions of a large group of people" (Pinsonneault & Kraemer, 1993, p. 77). The questionnaire of the current study was the main data collecting tool for the quantitative data. The questionnaire consisted of two main parts. The first part was

composed of 26 Likert-type items from strongly agree (1) to strongly disagree (5), and the second part included two open ended questions as well as questions asking about students' nationality, age, their familiarity with use of the smart board technology and the number of years of studying the English language (Appendix B).

The closed items of the questionnaire were adopted from two different studies. The first 13 items (1-13) were taken from Shams, Dabaghi and Shahnazari-Dorcheh's (2016) study, and the remaining 13 items (14-26) were taken from Türel's study (2011). The reliability of the first questionnaire (estimated by Cronbach's alpha coefficient) was 0.83, and the reliability of the second questionnaire was 0.94.

3.4.2 Semi-structured Interviews

Nunan (1992) emphasized three approaches to conduct interviews for research purposes. The first approach is unstructured interviews (the interviewee's answers are the leading factor for the discussion). The second is semi-structured interviews (the interviewee may lead the discussion or have some control over it but there is no specific list or order to ask the questions). The third one is structured interviews (the questions would follow a specific order, there would be a plan prior to making the discussion).

In order to triangulate the findings and bring more insights about students' overall reflection and feedback, a semi-structured interview was used to gather qualitative data. The questions of the interviews were mainly adapted from a study presented by Corbo (2014). However, some questions were added to fulfill the needs of the current study. The questions helped to elicit students' perceptions and views about the use of the smart board technology. The interviews were made to complement the data

gathered from the surveys and to bring more insights about students' overall reflection and feedback.

The interviews consisted of a total of 10 questions related to students' overall perceptions about the use of smart boards. The questions included asking about students' familiarity and experience with the smart board, students' most favorite and least favorite ways of using the smart board, students' opinions about the integration of the smart board inside the English language classes, and they were also asked to express if they face any difficulties when using the smart board technology (Appendix D).

3.5 Data Collection Procedures

The first step was to seek for an approval from authorized and official stakeholders at the EMU to be able to conduct the study. After receiving the approval letter, the head of the FLE department and the teachers of the ELT program and the secretary staff collaborated tremendously in the current study. Firstly, teachers' timetables were provided from the secretary along with students' distribution in each year. Then, visits were arranged with the instructors to come to their classes to present the questionnaires. After obtaining instructors' approvals about the timing and place to meet their students, the researcher started to visit each class at its usual class hours. The teachers introduced the researcher and explained the purpose of the visit to the students and asked for their participation in the study. Moreover, students' participation was clarified to be completely voluntary and the students were given relevant information about the aim of the study and written consents were also taken. The process took about three weeks of visiting several classes from all levels, 1st, 2nd, 3rd, and 4th year students. The survey was delivered to 102 students; however, the

total number of received filled in surveys was 100, two surveys were found to be unanswered which led to excluding them from being analyzed. The quantitative data was collected by distributing surveys to the students.

Meanwhile, interviews were conducted with 14 volunteered students from different levels to elicit their perceptions and views about the use of the smart board technology, as students and as pre-service language teachers. The interviews started during the same period of collecting the quantitative data from the surveys. The interviews were held inside the Education Faculty and the main technique to gather the qualitative data was by meeting the students and taking notes about their answers.

3.6 Data Analysis

The study involved gathering both quantitative and qualitative data. The quantitative data was collected by means of a survey and gathered from the closed items of the survey. The qualitative data was collected by asking open ended questions in the interviews and in the questionnaire.

The quantitative data was analyzed with the help of SPSS (Statistical Package for the Social Sciences) software program version 20.0. Descriptive statistics were used to calculate frequencies and mean scores. The qualitative data was analyzed through Content Analysis. Firstly, the gathered data from the open-ended questions of the interviews and of the surveys were categorized. Then, the similarities of the answers were identified and organized into categories to be finally counted. Any irrelevant responses or unclear entries were disqualified from being analyzed.

3.7 Issues of Validity and Reliability

The mixed methods approach helped the researcher to get more reliable results and meaningful feedback from the students. It is claimed that using a mixed methods approach of research design has the potential to be more beneficial to the researchers. Using this type of design enables them to collect more data than if they use only one method of research. Furthermore, the design of two methods may help in achieving more conclusive and accurate results of the intended research study (Creswell, 2009; Fraenkel, Wallen & Hyun, 2011).

The process of collecting the data was well planned and organized. The study involved 102 participants from the total population of 145 students. Questionnaires were presented after getting approvals from official parties and from the instructors. Student's participation was clarified to be completely voluntary. Interviews were held inside the Education faculty to ensure that the students will not have any difficulties to reach the researcher.

The questionnaire was piloted before presenting it to the students. The questionnaire was given to four of the students, the students were from four different levels. The researcher explained to the students the nature of the study and clarified its aim and research questions. The students expressed that they had no problem to understand the questionnaire.

Cronbach and Shavelson (2004) believed that reliability is the correlation of an instrument with itself. The reliability statistics of the current questionnaire are

measured using the SPSS program. As Table 3.3 shows, the results of the questionnaire showed an amount of Cronbach's Alpha of 0.88.

Table 3.3: Reliability Statistics for the Questionnaire

Cronbach's Alpha	Number of Items
0.88	26

3.9 Summary

This chapter provided insights about the overall research design of the study; it also outlined the context and participants, data collection instruments and procedures, data analysis, as well as the ethical considerations of the study. In the next chapter, the results of the collected data are presented and analyzed extensively.

Chapter 4

RESULTS

This chapter presents the results gathered from the analysis of the questionnaire and semi-structured interviews administered to the pre-service teachers of English. More specifically, it explains the pre-service teachers' perceptions regarding the use of the smart board technology from two perspectives: as students (i.e., their current position) and as teachers of English language (i.e., their future roles).

4.1 Research Question 1: What are the ELT students' perceptions about the use of smart boards in the ELT classrooms (as students)?

The first research question aimed at identifying the perceptions of the pre-service teachers regarding the use of the smart board technology in the ELT classrooms. The respondents expressed their agreement or disagreement about the closed items of the questionnaire on a 5-point Likert scale. Table 4.1 represents the results of positive items of the 26 closed items of the questionnaire

Table 4.1: Respondents' Perceptions about the Use of Smart Boards (SBs)

	SA	A	N	D	SD	M	SD
1. SB makes learning English more enjoyable.	41	39	20			1.79	0.75
2. SB encourages me to pay more attention to learning material.	31	43	25	1		1.96	0.77
3. I feel confident with an SB in the class.	28	30	39	3		2.17	0.87
4. SB increases my attention towards the course	27	42	25	6		2.10	0.87

5. SB increases my motivation in learning.	23	37	33	6	1	2.25	0.91
6. I can learn more when my teacher uses an SB.	19	43	33	4	1	2.25	0.84
7. SB use increases my interest in class.	24	40	32	3	1	2.17	0.86
8. Using SBs makes me active.	23	43	28	5	1	2.18	0.88
9. The way I learn English has been changed with SBs.	12	28	39	18	3	2.72	0.99
10. I can learn more when there is a SB in the class.	17	40	33	7	3	2.39	0.95
11. The SB helps me learn faster.	14	42	33	8	3	2.44	0.93
12. I can understand the lessons taught using SBs better.	21	37	35	5	2	2.30	0.92
14. I am interested in technology use in the classroom.	43	43	13	1		1.73	0.76
15. Learning how to use a SB is essential to me.	29	39	27	5		2.08	0.87
16. SBs can be used for all language skills.	29	50	15	6		1.98	0.82
17. SB makes me learn concepts easier.	20	43	32	5		2.22	0.82
18. Using SB helps me retain information easily.	28	42	26	4		2.06	0.83
19. Using SB increases my engagement in the learning process.	13	50	32	5		2.29	0.75
20. SB provides me variety of information.	27	52	19	2		1.96	0.73
21. I look forward to my teacher's using SB in class	16	38	38	7	1	2.39	0.87

Note: SA= strongly agree; A= agree; N= neither agree nor disagree; D= disagree; SD= strongly disagree, M= mean, SD= Standard deviation.

As shown in Table 4.1, in items 1 and 3, the respondents were asked to express their perceptions about their enjoyment and confidence when there is a smart board in their classes. Item 1 inquired about whether *the smart board can make learning the English language more enjoyable*. Eighty percent of the respondents indicated agreement whereas 20% chose to be neutral and none of the respondents chose to disagree, which indicates a high percentage of positiveness towards their enjoyment when they study the content of their courses with the help of the smart board. Similarly, the results of item 3 indicated a high level of agreement. When the respondents were asked (in item 3) whether *they feel confident when there is a smart board in the class*, 59% of them showed agreement while 3% disagreed and 39% of the responses were neutral. According to these results, the respondents agreed that they enjoy the lesson and feel confident during their classes when the instructor uses smart board.

In items 2 and 4, the respondents were asked about their perceptions regarding the smart board's contribution to increase their attention in the course and the presented material. In response to whether *the smart board technology can encourage them to pay more attention towards the learning material* (Item 2), 70% the respondents indicated agreement while 25% of them were neutral and only 1 person chose to disagree. The respondents expressed similar results of agreement in the fourth item when they were asked about if *the smart board increases their attention towards the course.* Accordingly, 69% agreed with the item while 25% chose to be neutral and 6% of the respondents expressed that they disagree. The results suggest that the respondents perceive the smart board as a tool that can increase their attention towards the course and the course material.

Items 5, 7, and 8 were concerned about whether the smart board technology was perceived as a stimulus to boost or lower the respondents' motivational levels and interests as well as whether the tool can make them more or less active during their lessons. The analysis showed similar high results of agreement and almost the same results of disagreement or being neutral. In item 5, the respondents were asked *whether the smart board technology can increase their levels of motivation in learning the language*, 60% of the respondents were positive about the item whereas 33% were neutral and 7% disagreed. In item 7, the respondents were asked *if the smart board technology can increase their level of interest in the class*. Sixty-four percent of the respondents agreed to the statement while 32% were neutral and 4% chose to disagree. In item 8, when the respondents were asked about *if using the smart board can make them more active*, 66% of them agreed, 28% were neutral whereas 6% disagreed, like the responses in the previous item. Based on the results, it can be said that the respondents agree with the positive contribution of the smart board technology to their motivation, interest and activeness during their lessons.

In the same vein, items 6, 10, 11 and 12 were related to the participants' perceptions about how the smart board technology can contribute to their learning and comprehension of lessons. In items 6 and 10, the respondents were asked *if they can learn more when their teacher uses the smart board technology* and *if they learn more when there is a smart board in the class*. In item 6, 62% of the responses were positive and 33% were neutral while 5% disagreed; in item 10, 57% agreed with the statement whereas 33% were neutral and 10% disagreed. Furthermore, in items 11 and 12, the respondents were asked *whether the smart board helps them learn faster* and *if they can understand the lessons taught using the smart board better*. The

analysis indicated that 56% of them were positive, 33% were neutral and 11% disagreed in item 11. In item 12, 58% agreed whereas 35% were neutral and 7% disagreed. These results can be interpreted as indicators of a high level of agreement and positiveness towards the items. Accordingly, the respondents feel that they can learn more when there is a smart board inside their classes and when their teachers make use of the smart board. Moreover, the respondents also endorsed the smart board technology as a tool that can help them understand the lessons in a better way and make them learn faster.

Regarding item 9, the respondents were also found to be positive when asked *if the way they learn English has been changed with the use of the smart board technology*. Forty percent of them agreed while 39% chose to be neutral and 21% disagreed. The analysis shows that the respondents do feel somehow positive about the statement and that the way that they used to learn the language has changed (in a positive way).

As presented in Table 4.1, in the questionnaire the 14th item was about *whether the respondents were interested in technology use in the classroom.* Data analysis indicated that 86% of the respondents agreed to the statement while only one response disagreed and a total of 13% were neutral. The responses given to the items of 17, 18, 19, and 20 also showed positive results. In addition, in item 15, the respondents were asked *if they find learning how to use the smart board is essential to them.* Sixty-eight percent of the respondents agreed, whereas 5% disagreed and 27% chose to be neutral. In item 16, the respondents were asked about *if the smart board technology can be used for all language skills*. Seventy-nine percent gave positive responses while 15% were neutral and about 6% disagreed. The results

reflected high positive levels of agreement, which suggests that the respondents were interested in technology use in the classroom and that they would be able to use the smart board technology in teaching all language skills.

In item 17, the respondents were asked *if the smart board can make them learn concepts easier*, and 63% of them responded positively and 32% chose the neutral option and 5% disagreed. In item 18, the respondents were asked *whether the use of the smart board can help them retain information easily*, and 70% agreed while 26% were neutral and 4% did not feel positive about the statement. Item 19 inquired about *whether using the smart board technology can increase their engagement in the learning process*. Sixty-three percent were positive while 5% disagreed and 32% were neutral. Item 20 was related to the smart board's potential to demonstrate various resources. More specifically, the respondents were asked *whether the smart board can provide them with a variety of information*. In response, 79% agreed while 19% chose to be neutral and only 2% were found to disagree. The results show that the respondents feel positive about the smart board use. The respondents believed that the smart board can help them learn the concepts of the language easier, have better retention abilities of information when learning the language and increase respondents' involvement in the learning process. Also, the smart board technology was believed to provide the respondents with a variety of information.

In item 21, the respondents were asked *if they look forward to their teacher's use of the smart board technology in the class*. Fifty-four percent of the responses were positive, 38% were neutral while 8% disagreed. The results indicate that the

respondents perceive the smart board technology as a significant element in their learning process and look forward to their teachers' using it.

Table 4.2: Respondents' Perceptions about the Use of Smart Boards (SBs)

	SA	A	N	D	SD	M	SD
13. I feel nervous when using the SB.	4	8	30	37	21	3.63	1.03
22. During SB use, there is a lot of noise in class.	4	12	38	37	9	3.35	0.94
23. We have technical issues (i.e. connection, stylus problems) with SBs.	11	25	38	18	8	2.87	1.08
24. Using a SB in lessons causes waste of time.	4	6	34	35	21	3.63	1.01
25. SB was exciting at the beginning but not anymore.	6	11	43	29	11	3.28	1.00
26. There is no need to use a SB in lessons.	2	8	27	35	28	3.79	1.08

Note: SA= strongly agree; A= agree; N= neither agree nor disagree; D= disagree; SD= strongly disagree, M= mean, SD= Standard deviation.

In Table 4.2, the results of the negative items are analysed. For item 13, the results showed higher levels of disagreement when the respondents were asked *whether they feel nervous when using the smart board technology*. Twelve percent of the respondents agreed with the item, which means that these students do feel nervous when using the smart board while 30% of the respondents were neutral and 58% of the respondents disagreed. In other words, the majority of the respondents believed that they do not feel nervous when they use the smart board technology.

The other items (22, 23, 24, and 25) represented some aspects of negativity related to the smart board use as well as respondents' expectations of the tool. In items 22 and 25, the responses were similar. In item 22, the respondents were asked *if there is a lot of noise in class during the use of the smart board technology*. Sixteen percent

showed agreement while 46% disagreed and 38% were neutral. The high level of disagreement (46%) indicates their satisfaction about the smart board use and that they do not complain about any noises when the smart board is being used. Furthermore, in item 25, the respondents were asked *if the smart board technology was exciting at the beginning but not anymore*. In response, 17% agreed whereas 43% were neutral and 40% disagreed. A high percentage of respondents indicated their uncertainty about the item; however, almost the same percent of the respondents disagreed as well, suggesting they do not feel that the smart board's popularity or excitement has faded with time.

In item 23, the respondents were asked w*hether they have technical issues (i.e. connection, stylus problems) when using the smart board technology*. Thirty-six percent of them gave positive responses while 38% were neutral and 26% did not agree. Again, in this item, quite a high percentage of the respondents (38%) seem to be not sure about their responses; however, almost the same percentage (36%) of agreement indicates that they feel there are some technical problems or issues when using the smart board technology. Only one quarter of the total participants (26%) did not see any technical problems in the smart board use. In addition, in item 24, when the respondents were asked *whether using a smart board in lessons causes waste of time*, 10% agreed while 34% chose to be neutral and 56% disagreed. The results show that the majority of the respondents are positive about the smart board use and that they do not feel that the tool causes them a waste of time during their lessons. Finally, in item 26, the respondents were asked *if they feel that there is no need to use a smart board in lessons.* Ten per cent of the respondents were positive while 27% were neutral and 63% disagreed. Sixty-three percent of disagreement

indicates the respondents' positive attitude towards the use of smart board technology in their lessons.

4.1.1 Open-ended Questions 5 and 6

The open-ended questions 5 and 6 were related to respondents' familiarity with the use of the smart board technology in their previous (earlier) years of studying. The respondents were asked the following questions: "Have you ever used smart boards in your earlier years (for example in Middle or High school, or Prep School at EMU?) If yes, give some detail about when and where it was". The responses indicated that 79 out of 100 respondents were familiar with the smart board while 21 said they were not. More specifically, 45 of the respondents had been using the smart board technology since high school or secondary school; and 9 of the respondents were familiar with the smart board technology since elementary, preparatory or middle school. Eleven percent of the respondents highlighted that they became familiar with the smart board technology when they started the university, especially at the English Preparatory School of EMU. Only 2 of the respondents said that they had used the smart board in every lesson since their early school years when they were in England. However, 21 respondents did not specify their place of familiarity with the smart board technology. Moreover, most of the smart board use was reported to be in a variety of subjects like geography and maths, rather than English. For example, S (student) 60 stated, "it was in high school; my math teacher was using it in his lesson".

Despite their early years of familiarity with the smart board technology as an educational tool, many respondents said that they or their teachers had used the tool to make presentations mostly, for example, PowerPoint slide shows. Regarding this

issue, S59 stated that even though he had been familiar with the smart board technology since high school, he was somehow disappointed with its use, saying "it was in my high school in Turkey; however, they didn't make good use of it".

4.1.2 Interview Results

The number of the respondents who volunteered to do the interviews was 14 in total and the interviews were held to bring more insights about respondents' perceptions regarding the use of the smart board technology. The participants were from different levels and included all four years of the study, namely 1st, 2nd, 3rd and 4th year. The aim of the interviews was to identify the perceptions of the current pre-service teachers of English about the use of the smart board technology from two perspectives, as students and as prospective teachers of English. The responses given in the interviews were coded and analysed carefully. In order to keep anonymity, the respondents were given pseudonyms such as Irem, Ece and Burak (1st year respondents); Banu, Ayşe and Deniz (2nd year respondents); Pelin, Erkan, Merve and Gizem (3rd year respondents), and Ali, Selin, Emrah and Emre (4th year respondents).

Table 4.3: Responses of the Interview Questions

Question 1	No. of Respondents	Responses
Tell me about your familiarity with technological tools in class. Have you ever studied in classes equipped with smart boards before (in high school, for example; or in prep class at EMU)?	11	Familiar (elementary/ middle/ high or secondary school/ or EMU prep sch.)
	3	Not familiar

In the first question of the interview, the interviewees were asked to talk about their familiarity with technological tools in class with some details. Although the same question was asked in the questionnaire as an open-ended question, it was hoped that during the interviews the responses would be more detailed. Like in the questionnaire, the majority of the respondents expressed their familiarity with the use of the smart board technology. A total number of 11 respondents mentioned that they had been using the smart board technology since high school or secondary or since coming to the EMU. Ali stated, "technological tools are very familiar to me in class since I was in secondary school". In this regard, Merve said:

> I am very well familiar with technological tools in class, since high school. It enhances relationships between students and teachers.... technology helps make teaching and learning more meaningful and fun.

The answers also indicated that the respondents had used the tool in a variety of subjects. For example, Emrah replied, "yes, when I was in high school, in my math class, we were using the smart board". Similarly, Banu stated, "... in high school we used it in our biology class". Another interviewee, Selin, emphasized the use of smart boards in her previous school years:

> I used smart boards in prep class in university. Also, when I was in high school, we listened to maths, social sciences, geography courses from our teachers and they used smart boards and we learned how to use them in class. For English lessons, we watched films with subtitles on the smart boards. Smart boards were also helpful in prep school.

Furthermore, Burak highlighted that although he had had the smart board technology since high school, he felt that he was still not familiar with their use. The student stated, "There was smart boards both in high school and EMU, but I am not very familiar with the use of technological tools". However, one student (İrem) mentioned that she was not familiar with the use of the smart board technology: "no, we

followed traditional style, only depending on our books. I had no experience before, as far as I remember".

Table 4.4: Responses of the Interview Questions

Question 2	No. of Respondents	Responses
When your teacher uses a smart board, what is a typical lesson like? Can you describe how the lesson starts and proceeds? In what ways does the teacher use the smart board?	7	Normal, as usual, effective, motivating, well organized and well delivered
	4	Mostly for slide shows/visuals
	3	Waste of time, technical issues, excessive use of presentations

When the interviewees were asked to describe a typical lesson in which their teacher uses a smart board, they gave a variety of answers and expressed more details about how their lessons start when using the smart board technology. About seven interviewees mentioned that their lessons start 'normal' or as 'usual'; basically, the teacher enters the class, then he/she starts the lesson, and then provides some visuals using the smart board technology. For example, Gizem said, "The lesson starts as usual, and then the teacher turns the smart board on. For the rest of the class it remains on. We use it for the PowerPoint demonstration most of the time". According to Erkan, "teacher demonstrates the summary of the topic and shows some visuals and videos". In fact, the majority of the interviewees highlighted that the smart board was mostly used to watch PowerPoint presentations or slides or to

provide some relevant materials. For example, Pelin said, “we use the smart boards for viewing PowerPoint slides. Also, we use it for watching videos as authentic materials”, whereas Emre pointed out that “when the teacher uses a smart board, the lesson becomes more effective. Teacher shows us slide shows or pictures or songs related with the topic”.

Furthermore, two interviewees gave more details about the nature of their lessons conducted with a smart board technology. Ali described his lessons as being well-organized and well-delivered with a variety of activities. He said, “it is normally a well-organized lesson, delivered at a decent pace, and involves activities to engage us in learning the objective the teacher sets out for us”. In addition, Deniz highlighted some important benefits related to the smart board technology use in the class and described how the teacher makes use of the tool, by saying the following:

> The lesson becomes more interesting and makes me more motivated to attend my class daily. Moreover, it helps our teacher save more time while teaching and adding extra information for making our class more valuable like searching for materials to add more information while teaching.

However, not all the interviewees seemed to like the way their classes started or proceeded using the smart board technology. Three interviewees reported on time concerns caused by the smart board technology while others mentioned some technological errors or complained about the excessive use of PowerPoint slides or presentations by describing them as ‘not the most effective way’. For example, Ayşe said, “to be honest, various teachers often have issues with the smart board because the technology is new for them”, while Merve stated, “the lesson starts late because of the smart board errors, but once it starts it’s very useful during the class”. Finally,

Selin highlighted similar things: “mostly they (teachers) use it to display PowerPoint which I believe isn’t the most effective way”.

Table 4.5: Responses of the Interview Questions

Question 3	No. of Respondents	Responses
Tell me about your favourite ways of using a smart board.	10	visuals (videos/pictures), authentic materials, sounds, presentations
	2	to practice phonetics
	1	reading courses (easier to follow texts)
	1	None

The interviewees were also asked to talk about their favourite ways of using a smart board. They mentioned a variety of smart board uses like watching videos, presenting presentations and practicing some language skills while some interviewees identified using the internet or watching YouTube as their favourite ways. For example, Banu said, “my favourite way is to use it for presentations and PowerPoint slides”, while Ali stated, “using social media as YouTube because you can watch videos as an example”. For Merve, her favourite would be the use of the internet, “whether it’s shows or videos, it is very useful”. Similarly, Emre said, “there are so many ways of using a smart board, but my favourite would be to use the web because there are a lot of educational resources available online, from videos to texts to interactive apps”.

In addition, some interviewees highlighted using the smart board to practice phonetics or pronunciation as their favourite way. Emrah stated, “my favourite was when we watch videos or when we practice phonetic lessons. In addition to this, it helps students to have a better pronunciation”. Burak also said, “to practice pronunciation, it’s beneficial for me”. Furthermore, one student (Selin) preferred using the smart board technology in her reading and writing classes, she described her favourite ways to use the smart board saying,

> I prefer to use the smart board for reading and writing courses. I prefer to use the smart board for reading course because students will read easily from smart board and they can see articles and they will discuss with each other.

In contrast, only one student (Deniz) out of 14 interviewees expressed that he is not bothered whether to use a smart board or not, when asked about his favourite way to use the tool. He said “none, it doesn’t matter to me whether smart board is used or not”.

Table 4.6: Responses of the Interview Questions

Question 4	No. of Respondents	Responses
Is there a way that a smart board is used that you think is least favourite or even boring?	9	There are no least favourite uses.
	5	when used excessively for PowerPoint presentations, reading texts, long slide shows

The next question was opposite to the previous question. The interviewees were asked to talk about the least favourite or even boring use of smart board technology.

A total number of 9 interviewees replied that they did not find any least favourite way to the smart board use or they did not think it was boring. For example, Ece said, “I wouldn’t say I have a least favourite way because using smart board is better than reading from a textbook. Also, I don’t find it boring”. Gizem stated, “In general, all smart boards look more appropriate compared to traditional board and somehow improve students’ performance as we can watch or see more clearly. My favourite way was when we put videos to watch.”

However, five interviewees found the smart board technology to be less favourite or somehow boring when used mostly for presentations or showing PowerPoint slides. For example, Banu said, “I don’t like it when teachers use it to show a slideshow full of writing just like the textbook. It is so boring and overwhelming”. Deniz and Merve also confirmed the same complaint: “yes, when they are used more as a projector instead of a smart board” (Deniz); “I think it is the least important when they use it only for PowerPoint” (Merve). Furthermore, Selin highlighted her point of view about the least favourite way to use a smart board. She said that students did not like the excessive use of smart boards for speaking classes because especially in speaking classes students should talk more and make eye contacts with each other rather than watching the materials on the smart board.

> I think smart boards shouldn’t be used too much for speaking lessons. Teachers start videos and they want to hear comments about it but they don’t create real class environment with smart board. So, they shouldn’t focus on smart board too much. Students should make eye contact with each other and teachers should provide real communication environments for us.

Table 4.7: Responses of the Interview Questions

Question 5	No. of Respondents	Responses
Are there any difficulties or problems that arise during the lesson while using the smart board?	10	technical issues, waste of time, instructors' lack of knowledge to use the tool
	3	there are no problems.
	1	eye problems if used excessively in dark areas.

The next interview question was about the difficulties or problems that arise during the lesson while using the smart board. The majority of the interviewees identified certain issues or problems when using the smart board technology in class while three interviewees said that they did not see any problems or difficulties that arose during the lessons. The identified issues varied from technical issues to time waste and problems with the pen or pointer. In this regard, Emre said "yes, sometimes smart board is not working or working slowly and sometimes pen is not working and teacher cannot write the notes". Ali pointed out instructors' lack of knowledge about how to use the boards, which causes delays and pauses. Merve said, "Sometimes smart boards open late, and thus lesson starts late. Time is important for students". In addition, Deniz added "sometimes the screen freezes, or the mouse doesn't work, and it is slow. It usually needs fixing, but they don't fix it". Gizem's statement is supporting these comments: "Almost always most of the smart boards in classes are not smart enough; they are slow, and this leads to time consuming".

Furthermore, a fourth-year student (Selin) highlighted an important issue that may arise as a big problem due to the wrong use of smart boards, especially when used excessively or in a dark place when lights are turned off. She identified the following issue and stated: “eye health is under threat… continuously staring at the screen of interactive whiteboards especially in dark areas can negatively affect the eyesight of the people”.

Table 4.8: Responses of the Interview Questions

Question 6	No. of Respondents	Responses
What was it like for you when you experienced using a smart board in your classroom for the first time?	13	interesting, new, brilliant, exciting and effective
	1	felt afraid

In another question, the interviewees were asked to describe what it was like for them when they experienced using a smart board in their classroom for the first time. Their replies included adjectives such as ‘interesting’, ‘new’, brilliant’, ‘exciting’ and ‘effective’ while describing their feelings when they started using the smart board for the first time. For example, Erkan stated, “interesting, because it was something new and different”. Ece commented on the smart board’s potential to create a collaborative environment, saying “it was exciting for me, especially as I am a visual learner and also the interaction aspect makes it engaging”. Ali added, “it was a very effective experience. I think it was because I understand the lesson better when the teacher uses the smart board”. Moreover, Merve thought that the smart board technology increased her interest during the lesson and helped to save more time in

the class. She said “it was like I have more desire to listen to my teacher. In the first time I used it for presenting my presentation, it helped me to add more videos and pictures, and also saved time”. In opposition to these positive replies, Emrah described his feeling as ‘fear’ when he was first introduced to the smart board technology: “Like I said, I was in high school, so in high school I didn’t know how to use it. I was afraid”.

Table 4.9: Responses of the Interview Questions

Question 7	No. of Respondents	Responses
How do you find lessons that involve a smart board different than lessons that do not involve a smart board?	12	fun, effective, motivating, interesting, clearer, detailed and better than traditional lessons
	2	Smart board was interesting in the beginning but not anymore.

The interviewees were also asked to describe how they find lessons that involve a smart board different than lessons that do not involve a smart board. The majority of the interviewees’ responses were about the way how they perceive their lessons with a smart board. They highlighted a variety of advantages and described the lessons as being ‘fun’, ‘effective’, ‘motivating’, ‘interesting’, ‘clearer’ and ‘detailed’. For instance, Emre said, “lessons are better thanks to the smart board, also information is clearer”. Burak expressed why he favoured smart board lessons by saying “lessons with smart board are easier to follow”. Ayşe commented on having the opportunity to be engaged in a collaborative environment with the smart board technology. She

said, “as a visual learner, I find myself more engaged and active when the smart board is involved”. Furthermore, Deniz highlighted: “I believe that lessons which involve the smart board are more effective than those which don’t involve them because it enables you to use the web… also visual learning by watching videos… and it is fun”. Similarly, Banu expressed her preference of lessons that involve a smart board, saying “I prefer a lesson with a smart board because it is more detailed in a way that you have more desire to continue the lesson compared to those lessons without a smart board”.

On the other hand, some interviewees felt that the smart board technology was interesting in the beginning but not anymore. Merve said, “smart board increases interest at first, but then it becomes boring”, while Pelin stated “it used to be more motivating, but after I get used to seeing the smart board in class, it doesn’t make any difference now”.

Table 4.10: Responses of the Interview Questions

Question 8	No. of Respondents	Responses
If you were given a chance, which option would you choose? The class with or without a smart board? Why?	11	with (motivating, more interesting, variety of materials, positive effects on students’ performance)
	2	both (shouldn’t be used at all times)
	1	without

In the next question, the interviewees were asked to tell which option they would choose - the class with or without a smart board. The majority of the respondents replied that they would choose a class with the smart board and that they prefer to use the technology. A total number of 13 interviewees out of 14 expressed their agreement to use the technology. For example, Erkan expressed his view of choosing a class with a smart board technology as follows: "I prefer the class with the smart board because of all the benefits it has and the ways it positively affects the students and our learning". Similarly, Emre expressed his choice of the class with the smart board technology with these words: "the class with a smart board of course… I don't see any harm in using smart boards. It provides language teachers with different input and new materials that was not possible before". Ali's response was similar, too: "I would choose a class with a smart board… it's more motivating and easier to follow".

However, among the interviewees who chose to use a class that involves a smart board technology, two interviewees (Merve and Selin) made an interesting comment. They both said they would prefer and use both (i.e., the smart board and the white board) due to the strengths and weaknesses of each. Another interviewee (İrem) stated that she would choose to use the smart board technology but not every time. However, one student (Emrah) replied with a negative answer and chose not to use the smart board technology in his lessons, saying "because it is easier to write on the whiteboard than the smart board".

4.2 Research Question 2: What are the ELT students' views about the use of smart boards in their future profession (as prospective teachers of English)?

4.2.1 Open-ended Questions 7 and 8

In the open-ended questions 7 and 8 (in the questionnaire), the respondents were asked about their views of the smart board use in their future careers. More specifically, they were asked: "Would you like to use smart board in your own class when you become a teacher of English? In what ways do you think smart board will be useful for teaching English? In other words, which skills will using smart board develop in language learners?" Most of the respondents were positive about using the smart board technology in their future career: 93 students said 'yes' to the first part of the question. For the rest of the question, the respondents gave a variety of answers. For developing language skills or areas, 10 of the respondents said that the smart board technology can be used for all language skills or areas. For example, S25 highlighted the following: "good technology, it can be used for all skills, it can help students learn faster". In addition, some respondents specified which language skills and areas that can be developed with the help of the smart board technology. Eighteen students mentioned that the smart board technology would be helpful in teaching listening, listening and vocabulary development, listening and pronunciation, listening and speaking, listening and writing, and listening and reading. For example, S1 said, "I think smart board provides a variety of materials such as audio, video ... etc. It develops reading and listening skills". S16 said:It is helpful for all skills but especially for listening. It is a quick way in a lesson. Also, it can be used for some technology tools such as Kahoot, Flipgrid ...etc., so it can be used for all skills.

S7 mentioned that the smart board is “very helpful when teaching listening and vocabulary”, and S75 added, “It is mostly beneficial for listening with the help of smart boards… variety input can be added to English language teaching”. On the other hand, S3 said, “I think it helps you to do more listening and reading skills, because, for example, when you do listening on YouTube, you can also see the lyrics”. In addition, S20 mentioned the following about the smart board technology: “we can use it for listening, reading, and writing. We can use different applications to develop these three skills”. About 4% of the respondents specified the best ways of using the smart board technology in their classes; the most preferred language areas were reading and writing lessons. For example, S37 stated, “I prefer if we use it in reading classes and brainstorming in writing”.

Moreover, many respondents described the smart board technology as ‘effective’ and ‘easy’ to use. S27, for instance, said, “using a smart board is more effective because you can find whatever you want in a minute”, and S18 highlighted, “easy for the teacher and the students”. Adding to its potential to be easy and an effective teaching tool, another interesting use attributed to the smart board technology was presented by S6, who highlighted the issue of paper waste: “distributing information via a smart board is way easier and efficient. It decreases the waste of paper which helps the environment. Other than that, smart boards will help learners learn”. Furthermore, some respondents highlighted the importance of the smart board technology in promoting communication opportunities and collaboration. For example, S68 said, “respondents probably get more active, listen carefully and collaborate more” and S74 believed that the smart board can “develop

communication skills, as well as helping students, especially the young learners. It also helps students to learn by doing".

Respondents' answers to the next open-ended question also suggested that the smart board technology can have a positive effect on learners' motivation levels. Eleven of the respondents found the smart board technology to be helpful in boosting learners' motivation and increasing their interest in the class. As stated by S67, the smart board "can be used as a tool to broaden kids' imagination and creativity", and S4 said, "it takes more attention of students… using it will be more interesting". Other replies suggested that the smart board technology can be fun and amusing to the students. S47 highlighted, "using a smart board makes a lesson more enjoyable and attention-catching, especially when we use it to show visuals that can help the learners understand the topic taught in the class". Similarly, S5 stated, "if it is used carefully by the teacher, learners will have fun while learning and this will make a bond between the subject and learners". Furthermore, the respondents' answers highlighted the smart boards' potential to provide visual aids and a variety of language materials. Eleven of the respondents considered the smart board as a helpful tool to provide relevant materials and visuals. In this regard, S12 talked about the importance of the smart board technology and said, "we will show what we talk about rather than asking learners to imagine… the visuals are really helpful, in my opinion". S54 supported the same idea, saying "Visualization of vocabulary makes way for communicative approach. Being able to do some alternations (highlighting, circling, etc) on learning materials that every student can see is good". Apparently, and according to the respondents, the smart board can help the learners to see the visuals such as real materials and get them exposed to authentic situations.

In addition, some respondents highlighted the smart board's potential to help with information retention and developing mnemonic skills. About 11% of the respondents mentioned the smart board's help in memorization and raising student's attention. For example, S21 stated, "it will gather all the attention and the learners will be able to understand and memorize what they hear and what they see". In the same vein, S58 highlighted, "it will help my students to learn faster and remember everything that we've done. In other words, it will be more memorable rather than talking without using a smart board".

On the other hand, two respondents gave negative responses to the use of the smart board technology and did not see any potential to the tool's potential to develop language skills in learners. For example, S28 said, "It is waste of time for me", and S17 stated, "I don't think it is useful at all. If they (i.e., learners) want to develop their language skills, they can improve it in any ways, not only by smart boards".

4.2.2 Interview Results

Table 4.11: Responses of the Interview Questions

Question 9	No. of Respondents	Responses
Are you planning to use a smart board in your own class when you become a teacher of English after you graduate? Why?	12	Yes (easier to use, fun, interesting, motivating, 21st century, importance of technology.
	2	No, difficult to use, difficult to maintain the class.

For question nine of the interview, the interviewees were asked whether they were planning to use a smart board in their own class when they become a teacher of English after they graduate. A total number of 12 interviewees expressed that they would use the smart board technology in their classes if they were given the chance, and they gave a variety of reasons on why they would use the smart board technology. Some interviewees perceived the technology as 'easy to use', 'interesting' and 'fun', while others felt that the tool has a potential to attract the attention of their learners. For example, Ayşe said, "Of course, I will use it because I can teach easily and give information clearly". Similarly, Merve stated, "Yes, I am planning to use smart board when I become a teacher because I like technology and also, I believe that I can make my lessons full of fun and attract my students, especially young learners and teenagers". Furthermore, many interviewees stressed the importance of equipping today's classes with the recent technology. For example, Deniz highlighted, "Yes, I am planning, especially because the current and future generation is driven by technology". Ali said, "Yes, because we live in the 21st century and I think it's impossible to teach without any technology". However, one interviewee (Emrah) replied that he preferred not to use the smart board technology, saying "because it is easier to write on the whiteboard rather than the smart board". Another interviewee (Emre) displayed a similar caution:

> If I have young learners, maybe I won't use smart board, because it will be already hard for me to manage the young learners; it would be much harder to do it if I also try to use smart board at the same time.

Table 4.12: Responses of the Interview Questions

Question 10	No. of Respondents	Responses
How can you use smart board in your future career?	12	authentic materials, visuals, educational games, speaking activities, brain storming applications and quiz games
	2	Have no idea.

During the interview, the interviewees were also asked how they can use smart board in their future career. The interviewees identified some ways or approaches to integrate the smart board technology and adjust it to their teaching. The first highlighted use was to present PowerPoint slides and to show visuals, such as videos, songs or pictures. For example, Banu said, “to use more visual aids like videos and presentations… it will be interesting for learners”. Some other interviewees added that using educational applications or games might be useful. Selin stated, “I can use PowerPoint, I can show them videos, pictures or songs. Also, we can play a game about the topic by using smart boards”, and Erkan said, “educational games, brain storming applications, and also quiz games”. Similarly, Burak added, “I can use it for slideshows, listening, searching something on the internet or simply writing something on a blank page… also playing educational games”.

Furthermore, other responses included the collaborative aspects that a smart board may provide. The interviewees believed that they can make use of the tool in a way that it will allow them to get more active, to be motivated and to get well engaged

during the learning process. For example, Ayşe stated, “it can be used to get learners engaged, interacting and active via games, activities and videos”. Similarly, Ali said, “I can use smart boards to increase students’ interaction, keep them active and motivated and also using videos via the smart board”. Finally, Ece expressed another important use of the smart board technology, which is ‘to demonstrate authentic materials’ to the learners. Although the majority of the interviewees expressed their favourite ways of using the smart board technology, only one interviewee was somehow not sure about how to use the smart board technology. He simply said, “I have no idea”.

4.3 Summary

This chapter presented the key findings of the study. More specifically, the results gathered from the analysis of the questionnaire and semi-structured interviews administered to the pre-service teachers of English were explained. The overall perception of the respondents was found to be positive in general. The majority of respondents expressed their willingness and positive attitude towards using the smart board technology in their classes as students and also in their future profession as teachers of English. The next chapter discusses the major findings of the study with respect to the available literature.

Chapter 5

DISCUSSION OF RESULTS AND CONCLUSION

This chapter provides a summary of the research and discusses the key research findings presented in Chapter 4, with reference to the related literature. Moreover, conclusions, implications of the study, limitations and suggestions for further research are also provided.

5.1 Discussion of Results

The study is an attempt to identify the ELT students' perceptions regarding the use of smart board technology from two different perspectives; as current students enrolled in the undergraduate program and as prospective teachers of English language who will be soon dealing with their career requirements. Based on the analyzed results, the overall perception of the students is positive towards the smart board use and the students seem to prefer using the smart board technology in their future profession. Moreover, the students expressed that they are familiar with the smart board as an educational tool. According to the results, the students feel that the smart board technology increases their level of enjoyment towards the course, boosts their confidence, and helps with their interest and attention in the course and the presented material. Likewise, in the literature, the smart board was described as being attractive to students and the smart board is believed to increase students' motivation and attain their attention more effectively than other traditional boards (Ball, 2003; Beeland, 2002; Kennewell, 2004; Smith, Higgins, Wall & Miller, 2005; Singh & Mohamed, 2012). Moreover, there are reports on students who perceived the smart board as fun

and a motivating tool which increased their enjoyment in the course and boosted their confidence and interest (Tataroğlu & Erduran, 2010; Yapici & Karakoyun, 2016). The students also felt that they can collaborate and learn more, understand the lessons better and faster when there is a smart board inside their classes or when their teachers integrate the smart board. This comes in the same vein as the findings of Aytac (2013), Graham and Santos (2015), Singh and Mohamed (2012), SMART Technologies Inc, (2006), and Shams et al. (2016).

Furthermore, the students in this study perceived the smart board as a tool that can increase their interaction and collaboration inside their classes. However, in contrast to the results, a study by Hadadi et al. (2014) suggested that the use of smart boards was not the key element in developing collaboration among the students. The students also expressed that they are interested in technology use inside the ELT classes and that they can use the smart board technology for all language skills. This perception comes in contrast to the study of Moss et al. (2007) who pointed out that the smart board technology is effective only when used in science studies such as mathematics or biology.

Concerning the problems that arise during the use of smart boards, the students were positive about this issue according to their responses in both survey and interview questions. The identified issues varied from technical issues to time waste or teachers' lack of competence in using the technology. The results are in line with the findings of Levy (2002), who reported on teachers who faced technical difficulties and time waste problems when using the smart boards. Moreover, teachers need proper training to use the smart board technology and to get the full of its potential in

improving the teaching and learning process (Ball, 2003; Glover & Miller, 2001; Levy, 2002; Walker, 2003).

Regarding student's most and least favorite ways to the use of the smart board, most of the students preferred to see a variety of visuals that includes multimedia, videos, sounds, pictures and rich content, and also to get engaged in special contents or applications that can help them in making good use of the language. This is highlighted in Graham and Santos (2015) and Glover et al.'s (2005) studies; the researchers mentioned that the students prefer to be taught using visual content such as images and pictures. However, several students didn't like the excessive use of PowerPoint presentations or long slide shows which they find boring. Moreover, some didn't prefer to use the tool in speaking classes as they believe it will hinder them from making real conversations and eye contact with their colleagues. In agreement to these findings are the ones of Beeland (2002), Cogill (2003), and Knight et al. (2004). Accordingly, excessive use of smart boards as a projector rather than an interactive tool results in boredom and weak performance of the students as they don't have the chance to interact more or collaborate with each other and make use of the tool more properly.

In addition, students' views regarding the use of the smart board in their future careers were also positive. Most of the students agreed that they need to integrate the smart board in their teaching. Moreover, the participants believed that learning how to use a smart board is essential to them and that they are interested in technology use in the class. The findings go in line with the conclusions of Akbulut et al. (2011), Bozdoğan and Özen (2014), and Campbell and Martin (2010). Accordingly, it is

essential to equip the pre-service teachers with the proper integration of educational technology.

5.2 Conclusion

The present study attempted to identify students' perceptions about the use of smart boards in the ELT classrooms; moreover, it explored their views as prospective teachers of English language. The results of the study indicated the students' positive perceptions regarding the use of smart board technology in ELT classes. Furthermore, the data also showed that the students would like to use smart boards in their future careers. The students preferred using the smart board technology over traditional boards in ELT classes as they considered it as an interesting, fun, motivating and easy tool to use. In addition, the tool was perceived to increase students' attention and interest, promote mnemonic techniques and help the students to achieve better learning outcomes. However, the students reported on some shortcomings or drawbacks over the smart board use which included technical issues and instructors' lack of competence to use the tool. The students also did not like the excessive use of the tool in presenting PowerPoint presentations or slideshows as the students preferred to use the tool in promoting collaboration and interaction among the students.

5.3 Implications of the Study

Some pedagogical implications can be drawn from the current study. Firstly, the findings of the study are thought to provide useful feedback to both the instructors and the administration at the FLE department. This would give them the chance to know the ELT students' perceptions about the use of the smart board technology. Secondly, in other contexts, an awareness about students' needs and preferences can be raised regarding the integration of the smart board technology in the ELT classes.

Moreover, the instructors may also examine the shortcomings identified by the students to help in achieving better learning performance. In this light, the instructors would be aware of how the students really perceive the smart board use. What is more, the administration could also take this into account when equipping the facilities with the smart board technology. To explain more, the results will help the instructors and the administration to gain awareness about the importance of integrating the smart board technology in the process of learning and teaching. Lastly, the findings of the current study, in this specific context, could be added to the findings of the previously conducted studies; that is to the existing literature.

5.4 Limitations

There are several limitations that can be identified in the current study. Firstly, the context of the study is limited. The study was conducted at one place and included students from the same department. In other words, the results of the study cannot be generalised. Secondly, the study investigated students' perceptions in a more generalised way. In other words, the study did not focus on any particular use of smart board to address specific uses or approaches or learning styles of the learners. Furthermore, the number of the participants can be considered relatively small. The goal was to reach the whole population of 145 students of the ELT program; however, students' absence and other difficulties hindered to reach the whole population and the returned filled in surveys were 100. This number, though, is quite satisfactory statistically. One another limitation is related to the participants; only students were involved in this study; the teachers were not included. Their perceptions could have been explored as well. Finally, the data was collected by using a mixed methods approach that included the use of two instruments, a survey and semi instructed interviews which may not be enough to generate broader results.

For example, richer findings may have been achieved if there had been an observational phase or experimental situations like experimental and control groups.

5.5 Suggestions for Further Research

The results of the current study revealed suggestions for possible further research. Firstly, the findings of this study are limited to the intended context. In other words, the scope of this study is unique; therefore, this study may be repeated in different and larger contexts to help in verifying the results of the study. For example, in another study the pre-service teachers of English in all universities in TRNC can be involved as participants. Secondly, the study was concerned about investigating the pre-service teachers only; hence, the instructors of the students might be included in further research. Also, future research can focus on certain aspects of the smart board use which would address specific uses or approaches or learning styles of the learners.

Finally, different research approaches and tools can be implemented in further studies to expand the scope of the findings. For example, by observing the students in their daily classes, at their natural settings when making use of the smart board technology, or by dividing the students into two experimental groups where one group gets the chance to be taught by the smart board technology while the other group is taught by traditional board.

5.6 Summary

The aim of this chapter was to discuss the results of the current study in line of the available literature. Moreover, a conclusion of the overall summary of study was presented. After that, the chapter brought some insights on possible practical implications of the study. Following that, in order to identify the research gaps,

several limitations of the study were provided. Finally, some recommendations for future research were suggested in light of the research limitations.

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APPENDICES

Appendix A: Questionnaire Consent Form

Consent Form for Questionnaire

Dear respected student,

You are kindly invited to take part in the research titled: **Investigating the Pre-service English Teachers' Perceptions of the Use of Smart Board Technology.** The questionnaire below aims to investigate students' attitudes and perceptions toward the use of smart boards or interactive whiteboard (IWB) technology. Your participation is completely voluntary. No risks and no direct benefits are anticipated as a result of your participation in this study. You are free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, if you do not wish to answer any question or questions, you are free to decline. Answering this questionnaire will take between 10-15 minutes.

It is very important that you answer all the questions sincerely. You are not required to write down your name on the survey. Other identity-related details such as the institution will be used only for research purposes, and no one except the researcher and her supervisor will be allowed to access to the filled-in forms.

Further information can be obtained directly from me or my thesis supervisor. Thank you for your participation and cooperation.

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✂.....

Consent Form

I confirm that I have read and understood the main purpose of this survey, and how my answers will be used. Thus, I agree to take part in this survey.

Name-Surname: ----------

Signature: ----------

Date: ----------

Appendix B: The Questionnaire

Questionnaire

- **Part (1), students' perceptions about the use of smart board (SB) technology**

Instructions: Please indicate your reaction to each of the following statements by ticking (✓) the column that represents your level of agreement or disagreement with it.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. SB makes learning English more enjoyable.					
2. SB encourages me to pay more attention to learning material.					
3. I feel confident with an SB in the class.					
4. SB increases my attention towards the course					
5. SB increases my motivation in learning.					
6. I can learn more when my teacher uses an SB.					
7. SB use increases my interest in class.					
8. Using SBs makes me active.					
9. The way I learn English has been changed with SBs.					
10. I can learn more when there is a SB in the class.					
11. The SB helps me learn faster.					
12. I can understand the lessons taught using SBs better.					
13. I feel nervous when using the SB.					

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14. I am interested in technology use in the classroom.					
15. Learning how to use a SB is essential to me.					
16. SBs can be used for all language skills.					
17. SB makes me learn concepts easier.					
18. Using SB helps me retain Information easily.					
19. Using SB increases my engagement in the learning process.					
20. SB provides me variety of information.					
21. I look forward to my teacher's using SB in class					
22. During SB use, there is a lot of noise in class.					
23. We have technical issues (i.e. connection, stylus problems) with SBs.					
24. Using a SB in lessons causes waste of time.					
25. SB was exciting at the beginning but not anymore.					
26. There is no need to use a SB in lessons.					

- **Part (2) Please indicate your response to the following questions by checking the appropriate boxes.**

1. What is your gender?

☐ Male
☐ Female

2. What is your age?
   - ☐ 17-19
   - ☐ 20-24
   - ☐ 25+

3. What is your nationality? Please write down. .....

4. Including the current year, how many years have you been studying English language?
   - ☐ 1-5
   - ☐ 5-10
   - ☐ 10+

5. Have you ever used smart boards in your earlier years (for example in Middle or High school, or Prep School at EMU?)
   - ☐ Yes
   - ☐ No

6. If yes, give some detail about when and where it was. .....
   .....
   .....

7. Would you like to use smart board in your own class when you become a teacher of English?
   - ☐ Yes
   - ☐ No

8. In what ways do you think smart board will be useful for teaching English? In other words, which skills will using smart board develop in language learners? .....
   .....
   .....
   .....
   .....
   .....

Thank you for your collaboration!

Appendix C: Interview Consent Form

Consent Form for Interview

Dear respected student,

You are kindly invited to take part in the research titled: **Investigating the Pre-service English Teachers' Perceptions of the Use of Smart Board Technology.** The study aims to investigate students' attitudes towards and perceptions about the use of smart boards or interactive whiteboard (IWB) technology. Your participation is completely voluntary. No risks and no direct benefits are anticipated as a result of your participation in this study. You are free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, if you do not wish to answer any particular question or questions, you are free to decline.
It is very important that you answer all the questions sincerely. The interview will be recorded.

The audio recording made for this interview will be analyzed only for research purposes. Your identity and individual responses will be kept confidential and be used only for research purpose. Extracts from the interview from which you would not be personally identified may be used in any conference presentation, report or journal article developed as a result of the research. No other use will be made of the recording without your written permission. And that no one except the researcher and her supervisor will be allowed access to the original recording. Further information can be obtained directly from me or my thesis supervisor.
Thank you for your participation and cooperation.

Hanya Younis	**Prof. Dr. Ülker Vanci Osam**
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✂.....

Consent Form
I confirm that I have read and understood the main purpose of this interview, and how my answers will be used. Thus, I agree to take part in this interview.

Name- Surname: ----------

Signature: ----------

Date: ----------

Appendix D: Interview Questions

Investigating the Pre-service English Teachers' Perceptions of the Use of Smart Board Technology

Interview Questions:

1. Tell me about your familiarity with technological tools in class. Have you ever studied in classes equipped with smart boards before (in high school, for example; or in prep class at EMU)?
2. When your teacher uses a smart board, what is a typical lesson like? Can you describe how the lesson starts and proceeds? In what ways does the teacher use the smart board?
3. Tell me about your favorite ways of using a smart board.
4. Is there a way that a smart board is used that you think is least favorite or even boring?
5. Are there any difficulties or problems that arise during the lesson while using the smart board?
6. What was it like for you when you experienced using a smart board in your classroom for the first time?
7. How do you find lessons that involve a smart board different than lessons that do not involve a smart board?
8. If you were given a chance, which option would you choose? The class with or without a smart board? Why?
9. Are you planning to use a smart board in your own class when you become a teacher of English after you graduate? Why?
10. How can you use smart board in your future career?

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