

A CRITICAL ANALYSIS OF RESEARCH TRENDS IN EDUCATIONAL
TECHNOLOGY THESES AND DISSERTATIONS IN TURKEY

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY
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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY
IN
COMPUTER EDUCATION AND INSTRUCTIONAL TECHNOLOGY

JUNE 2017

Approval of the thesis:

A CRITICAL ANALYSIS OF RESEARCH TRENDS IN EDUCATIONAL
TECHNOLOGY THESES AND DISSERTATIONS IN TURKEY

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ABSTRACT

A CRITICAL ANALYSIS OF RESEARCH TRENDS IN EDUCATIONAL TECHNOLOGY THESES AND DISSERTATIONS IN TURKEY

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June 2017, 197 pages

The first aim of this study is to explore the current research trends in the context of graduate programs in the field of Educational Technology in Turkey, and uncover the possible factors that influence these research trends from the perspective of faculty members working at Educational Technology graduate programs. Secondly, this study aims to understand faculty members' expectations for the future of the field, and their suggestions on how to make Educational Technology field better than as it is today. This study is informed by critical theory. To achieve the aims of the study critical inquiry method is used. Two different data gathering techniques were used sequentially. In the first phase, content analysis technique is used to explore current research methods and topics trend in theses and dissertations completed in Educational Technology graduate programs in Turkey. In this phase, 705 theses and dissertations were analyzed from 1996 to 2016. In the second phase of the study, in-depth interviewing technique was used to uncover factors that have been influential on

educational technology research trends, and to understand faculty members' expectations for the future of the field. Interviews were conducted with eleven faculty members working in Educational Technology graduate programs.

The findings of the content analysis indicated that Educational Technology research is dominated by quantitative research designs. However, qualitative research designs have gained the attention of researchers in the last ten-years. The current study addressed that critical methods in the examined theses and dissertations were overlooked. The most preferred research topics were identified as learning environment, delivery method of training and instruction, emerging technologies and acceptance of emerging technologies. The results also showed that social, cultural, and political issues have been largely silenced in the examined theses and dissertations. The findings of in-depth interviews showed that the factors that have been influential on Educational Technology research trends are motivational factors, and influence of the way of thinking about technology. Besides, the interview findings present suggestions for better educational technology research, and predictions for the future of the field in Turkey. The results of this study presents implications for research as well as educational technology graduate students, educational technology scholars, policy makers and practitioners for better educational technology research by addressing blind spots of the field and provides suggestions on how it could be better than it is today.

Keywords: Critical Theory, Educational Technology Research Trends, Critical Research

ÖZ

TÜRKİYE'DE EĞİTİM TEKNOLOJİSİ ALANINDA YAPILMIŞ TEZLERİN ARAŞTIRMA EĞİLİMLERİ YÖNÜYLE ELEŞTİREL ANALİZİ

Kara Aydemir, Ayşe Gül

Doktora, Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü

Tez Yöneticisi: Yrd. Doç. Dr. Gülfidan Can

Haziran 2017, 197 sayfa

Bu çalışmanın birinci amacı, Türkiye’de Eğitim Teknolojisi lisansüstü programlarındaki güncel araştırma eğilimlerini bulmak ve bu araştırma eğilimlerini etkileyen olası faktörleri Eğitim Teknolojisi lisansüstü programlarında çalışan öğretim üyelerinin de bakış açılarından inceleyerek ortaya çıkarmaktır. İkinci olarak bu çalışmanın amacı öğretim üyelerinin alanın geleceği ile ilgili beklentilerini ve Eğitim Teknolojisi alanını bugünden daha iyi bir noktaya taşımak için önerilerinin neler olduğunu anlamaya çalışmaktır. Bu çalışma eleştirel kuram çerçevesinde yürütülmüştür. Çalışmanın amaçlarına ulaşmak için eleştirel araştırma yöntemi ve sıralı olarak iki farklı veri toplama tekniği kullanılmıştır. İlk aşamada, Türkiye’deki Eğitim Teknolojisi lisansüstü programlarında 1996-2016 yılları arasında tamamlanan yüksek lisans ve doktora tezlerindeki araştırma yöntemlerindeki ve seçilen araştırma konularındaki eğilimlerin ortaya çıkarılması için içerik analizi tekniği kullanılmıştır. Bu aşamada 705 adet yüksek lisans ve doktora tezi incelenmiştir. Çalışmanın ikinci aşamasında ise, Eğitim Teknolojisi araştırma eğilimlerinin oluşmasına etki eden

nedenleri ortaya çıkarmak ve bunun yanı sıra öğretim üyelerinin alanın geleceği ile ilgili beklentilerini anlayabilmek için derinlemesine görüşme tekniği kullanılmıştır. Bu görüşmeler Eğitim Teknolojisi lisansüstü programlarda çalışan on bir öğretim üyesi ile yapılmıştır.

İçerik analizinden elde edilen bulgulara göre, Eğitim Teknolojisi alanındaki araştırmalarda nicel araştırma yöntemleri hakim durumdadır. Buna rağmen son on yılda nitel araştırma yöntemleri araştırmacıların dikkatini çekmektedir. Bu çalışmanın gün yüzüne çıkarttığı bir diğer husus ise incelenen tezlerde eleştirel araştırma yöntemlerinin kullanılmamış olmasıdır. En çok tercih edilen araştırma konuları öğrenme ortamları, eğitim/öğretimin veriliş yöntemi, yeni çıkan teknolojiler ve yeni çıkan teknolojilerin kabulüdür. Bu araştırmanın başka bir bulgusu da incelenen tezlerde sosyal, kültürel ve politik konulara yeterince yer verilmemesidir. Görüşme sonuçlarına göre Eğitim Teknolojisi araştırma eğilimlerinin oluşmasını etkileyen etmenler güdüleyici faktörler ve araştırmada teknolojiyi algılayış biçimin etkisi olarak bulunmuştur. Bunun yanı sıra, daha iyi bir eğitim teknolojisi araştırması için öneriler ve geleceğe yönelik öngörüler görüşme tekniği ile elde edilen diğer bulgulardır.

Bu araştırmanın bulguları ışığında hem araştırmaya yönelik hem de uygulamaya yönelik öneriler sunulmuştur. Bu çalışmada Eğitim Teknolojisi alanının kör noktalarının görülmesi sağlanmıştır. Böylece Eğitim Teknolojisi alanında eğitim gören lisansüstü öğrencilere, alanda çalışan akademisyenlere, karar alıcı kişilere ve alanda çalışan uygulayıcılara daha iyi bir Eğitim Teknolojisi araştırması için öneriler sunulmuştur.

Anahtar Kelimeler: Eleştirel Teori, Eğitim Teknolojisi Araştırma Eğilimleri, Eleştirel Araştırma

To my dearest Akın

&

To Göknur KAPLAN who lights up the darkest days

ACKNOWLEDGEMENTS

First and foremost, I wish to thank my supervisor, Asst. Prof. Dr. Gülfidan Can for her continuous support, encouragement, suggestions, wisdom, and trust on me. She inspired and challenged me to reach my highest potential. It has been a privilege to study with such an outstanding, supportive, and exceptional professor. Without her mentorship, I could not have achieved this work.

I also would like to thank my examining committee members Prof. Dr. Zahide Yıldırım, Prof. Dr. Nurettin Şimşek, Assoc. Prof. Dr. Ömer Delialioğlu and Assoc. Prof. Dr. Serçin Karataş, for their invaluable contributions, motivation, feedback, and encouragement. Special thanks to the informants of this study for their time and invaluable contributions.

I would like to express my sincere appreciation to Prof. Dr. Kürşat Çağıltay and Prof. Dr. Soner Yıldırım for their support and unequalled contributions to my professional development. I also extend my thanks to Prof. Dr. Ann Thompson who provided an outstanding mentorship at Iowa State University, and Assoc. Prof. Dr. Ryan Evely Gildersleeve who introduced me to Critical Theory. Thank you Dr. Gildersleeve for listening my ideas tirelessly and for your contributions to my dissertations.

I extend my thanks to Assoc. Prof. Dr. Bekir Gür and Dr. Gökür Kaplan to whom this dissertation is dedicated for their great support and unequalled contributions to my processes. I also would like to show my gratitude to my dear friends Dilek Hançerli, Burcu Özdemir Sarıgil, Ezgi Karagöz Eker, Dr. Süleyman Umut Eker, Assist. Prof. Dr. Erman Uzun, Assist. Prof. Dr. İlker Yakın, Gülenay Vardarlı Korgan, my sister-in-law Bahar Aydemir Kırılıkova, Tulunay Nejat Kırılıkova and other friends who

supported me through during this challenging journey with their moral support, encouragement, and advices.

I wish to thank my parents, Duran Kara and Ramazan Kara, and also my sister Fatma Derya Akın, and my brother Emre Kara for all their love and encouragement during my life. I am so lucky to have such a great family. I would also like to thank my cousins Şerife Canan Sevinç, Zehra Sevinç, Halil Sevinç, and my aunt Ayşegül Sevinç for their support, love, encouragement and cheering me up whenever I needed them. My purring buddy Çapkın deserves a big thank for always laying on my keyboard whenever I studied.

Most importantly, I would like to thank my beloved husband Akın, to whom this dissertation is dedicated, for his endless love, concern, support, and strength during the past few years making this dissertation possible.

I would like to thank TÜBİTAK for scholarship during my doctoral education. Finally, I would like to thank everybody who was important to the successful realization of this study, as well as expressing my apology that I could not mention personally one by one.

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CHAPTER I

INTRODUCTION

This introductory chapter presents the justification for research by addressing the issues that underlie the background of the study, purpose of the study, significance of the study, motivation of the researcher for this study, and guiding research questions. Important terms are defined and an overview of the remainder for this study is presented.

1.1 Background of the Study

Educational technology, engaging with both theory and practice, is a dynamic emerging field (Januszewski & Molenda, 2008), and has grown and evolved with the influence of various factors including historical developments, technological innovations, and, paradigm shifts in theories and approaches to scientific inquiry (Ely & Plomp 1996; Reiser, 2007). The recognition of educational technology as a distinct field and a profession was attributed to developments in psychology; specifically, behaviorism and cognitivism (Seattler, 1991); accordingly, psychology has been accepted as natural foundation of educational technology (Gur & Wiley, 2008).

The establishment on psychology has inevitably influenced the way knowledge is produced, and issues to be signified in the field of educational technology. Many developments in the field were accomplished due to knowledge base and research methods of psychology; for example, programmed instruction, computer assisted instruction, and individualized instruction can be listed as outcomes of behaviorist

tradition; and cognitivist tradition remarkably informed instructional design process, which is considered as a subset of educational technology.

According to Apple (1996) the centrality of psychology in educational technology needs to be questioned since one cannot assume that it is inherently good or without any problems. He argued that due to the centrality of psychology in the field, psychological issues have been signified in theoretical discussion of educational technology; consequently, critical issues including political, philosophical, and societal have gained less attention.

The field has portrayed a mostly traditional philosophical stance since it took roots in psychology, and objectivism was the dominant epistemology (Muffoletto, 2001; Bopry, 1999; Selwyn, 2010; & Apple, 1996). Therefore, it is argued that the field has been steered by instrumental rationality which refers to objective form of action that treats everything simply as a means to end, and aims to find out most effective ways to reach certain ends (Kincheloe & McLaren, 2000). Similar to most of other social sciences, instrumental rationality has provided framework for studies in educational technology (Bopry, 1999). Instrumental rationality delimits its questions to “how it works” instead of asking “why it works”. Muffoletto (2001) notes that rationalistic and mechanistic ways of knowing and thinking have become normalized, and part of educational technology researchers’ and practitioners’ common sense taken for granted. He further claims that rationalistic and mechanistic consciousness have steered the work and the values of the field, and hegemony of psychology, instrumental rationality in educational technology is not without their problems.

Ely (1998) summarizes the findings of Winn’s (1997) study on instructional technology curricula and concludes that there is a heavy emphasis on “how to do it” and less on “why to do it” in the professional literature of the field. In other words, educational technology has struggled to find answers to “how to” questions for many years. However, educational technology researchers need to ask wider questions in order to notice what is unnoticed (Selwyn, 2010).

As a result of hegemony of psychology over the field, not only what issues to be studied and signified but also the way the issues to be studied, in other words research methods, have been influenced by this stream. Selwyn (2015) contends that taking critical perspectives is vital for educational technology researchers so as to take the field further and make it better than as it is today by means of recognizing critical issues. He notes that instrumental rationality informed educational technology literature; therefore, computing and other digital technologies associated with improvement in education have been taken as default logic.

In addition to aforementioned issues, technological innovations have dramatically shaped the way educational technology researchers study, and give direction to issues to be signified. In today's world, even since at least industrial age, modern technology necessitates shaping our daily and professional lives in a technological way since it is believed that technology opens up world due to its capabilities and power to transform both daily and professional lives.

However, in order to legitimize the adoption of novel technologies in educational settings solely leaning on the "because it is there and available" argument would end up with disappointment (Salomon & Almong, 1998). Apple (1991) acknowledged that our task as educators is to make sure that when it enters the classroom it is there for politically, economically, and educationally wise reasons, not because powerful groups may be redefining our major educational goals in their own image (p.77). On the other hand, Nichols (1991) argued that general technology would have negative outcomes as well. He further articulated that since educational technology was considered as a subset of general technology (Heinich, 1984, p.67, as cited in Nichols, 1991); it is reasonable to expect that educational technology also have negative consequences.

It is possible to claim that educational technology professionals have been divided into two camps in terms of supporting technology use in educational environments (Collins & Halverson, 2009). The first camp – technology enthusiasts - argue that technology's transformative power provides us capabilities to reshape education, and schools should

catch up with new technologies as they prepare students to world they are entering. The second camp – technology skeptics – argue that it is important to take a critical stance when imposing a new technology into education, and underline the necessity to question “who benefits”, “who loses”, or “whose interests are served”. This critique does not imply a technophobic approach to using technology in the service of learning or education, rather it draws attention to the importance of being skeptical about established beliefs that technology would eventually revolutionize learning and education.

Starting from audio-visual movement, educational technology literature clearly indicates that enormous efforts to utilize computer and related technologies to improve learning have ended up asking “what works” and “how it works” questions, but neglected “why to do it” questions. Pollard & Pollard (2004) expressed that since the introduction of computers into education, early studies focused on showing the impact of a particular technology or software on student achievement and motivation; and as the computer and Internet technology became more accessible, researchers extended their efforts to examine the role of technology in educational settings. Honey, Culp & Carrigg (2000) claimed that educational technology’s research questions evolved in line with changing technologies. They argued that even though there have been studies showing that computer technologies improve student learning (Kulik & Kulik, 1991); those studies did not acknowledge the importance of understanding technology use in a social context. Rather, they tended to treat technology as a discrete and isolated.

Postman (1996) claims that in *The End of Education* “we instructional technologists are professional, consumed by our expertise in how something should be done, but afraid or incapable of thinking about why”. He also critiqued that educational technology professionals take a “*sleepwalking attitude*” toward technologies when integrating them into educational setting and conducting research. Therefore, the historical fact that technological changes produce both winners and losers (Postman, 1995; Feenberg, 1991) has not been taken into consideration in educational technology research practices (Apple, 1991). Nichols (1991) claimed that educational technologists often responded to various kind of social imperatives, especially

purchasing hardware due to economic and political reasons rather than reasons connected to education.

It has been pointed out by those who study the history of educational technology that many failure stories of unfulfilled promises of technology in education and learning have accumulated in the professional literature of the field (Reiser, 2007; Cuban, 2001; Seattler, 1990; Cuban, 1986). Lee and Winzenried (2009) noted that all the technologies in the school market had been launched with big expectations; however, none of them (it may be film, radio, instructional TV or personal computing in different forms) were widely used, they ended up with poor uptake by schools. To illustrate, starting from instructional radio, educational technology professionals have expected new technologies to transform the way instructors teach and learners learn remarkably. Yet, those expectations, even today – in spite of huge developments in technology, has not been realized. Cuban's (2001) study with Silicon Valley teachers showed that due to unexpected results arising from access and use of new technologies in schools attract policy makers' attention because the money invested in technologies have yet to produce the desired outcomes (p. 136).

For example, computers' great attributes and affordances comparing to earlier technologies highly grasped the attention of educational technology community and policy makers; therefore, huge investments were made in order to equip schools with this new shining technology, and a vast number of research was conducted. However, in spite of those enormous research and investments, and providing wide access to new technologies in schools, Cuban (2001) in his well-known book "*Oversold and underused: Computers in the Classroom*" claims that technological revolution did not occur either in learning or teaching in the most of American schools. He adds that teachers at all levels of schooling have used the new technology simply to continue what they have always done (p.179); and, evaluates this situation as a disappointment and failure. Similarly, Muffoletto (2001) expresses that this perennial problem mainly stems from never-ending expectations of new technologies used for educational and instructional purposes to revolutionize learning or education throughout the history of the field. Duffelmeyer (2001) contends that educational technology professionals

should consider about how a productive collaboration of education and digital technologies become possible.

“Taken for granted” approach to using technology in the service of education and learning is not without its problems. Selwyn (2014) criticizes that the need to ask critical questions of digital technology in education is not immediately apparent comparing to other major educational problems of our times. He claims that many people presume digital technology less problematic element of contemporary education. Yet the use of digital technology in education should now be seen as a significant issue for everyone with a stake in education. Muffoletto (2001) suggests that those working within the field of educational technology and education in general, need to embrace a reflective historical understanding of technology and the force steers and maintain it within a discourse of progress, self-interest, and the public good.

Taylor and Swartz (1991) argued that instructional technology has been commonly understood a value-neutral method of conveying instruction (p.61). In other words, techno-centric way of knowing and values dominated the field. However, the lack of a sustained critical perspective throughout the academic study of technology and education will be self-evident to anyone with even a passing interest in the literature (Selwyn, 2015). This point of view gave rise to considering education and technology as an area of study where commercial activities and popular debates of promises of technology take place, and neglects the critiques. Indeed, the forever-delayed technological transformation of education has been a main theme of the past hundred years (Cuban 1986, Watters 2015). Similarly, Selwyn (2014) claimed that educational technology refers to a commercial field of technology development, production, and marketing, as well as thriving field of academic study and scholarship (p.6). Patrick Welsh, a thirty-year English teacher at a public school in USA reflects a practitioner’s view; he said that too many school systems are becoming device-driven; they are buying computer devices because they are there (Welsh, 2009).

In a similar vein, Spring (2012) defines ICT policy in his own words as the exercise of power to try and control the information distributed through media, the Internet, and

educational institutions (p.3). He argues that the media, the Internet, and educational institutions are interrelated; particularly with the growth of online instruction and research. He states that there are many reasons for wanting to control ICT, including maintaining political and economic power and desire by education companies to sell their products. It is clear from his statement that ICT dominates discussion about the goals and methods of instruction. This statement needs to be critically questioned. Bigum, Bulfin and Johnson (2015) echoes the view of Michael de Certeau, a French philosopher, that in order to understand a field, it is crucial to examine not only what it includes but also what it excludes. Accordingly, it is of great importance to figure out not only what the literature of the field includes but also which issues have been silenced, and to question why certain issues have been signified, while others have been silenced in the literature of the field over the years.

Honey, Culp, and Carrigg (2000) stated that various dynamics influence the way educational technology researchers think differently about the research. To illustrate, changes in technological elements affects the research, research questions to be asked, how research is conducted, and methods being used are shaped by the several factors. They further noted that the changes in technologies themselves have shaped the research questions as well. Morrison and Ross (2014) acknowledged that instructional technology research needs to put emphasis on relevant and quality research addressing issues relevant to the field. Additionally, they emphasized the importance of reflecting the complexity of the field in research practices; and underlined the necessity of asking wider questions rather than “what works”.

This study employs critical theory as a theoretical framework in an attempt to find out which research topics and research methods have been signified, which research topics and research methods ones have been silenced in the field of educational technology in the context of Turkey, and uncover the reasons why certain research topics and methods received more attention while others have been silenced. In other words, this research brings a critical theory framework to the trend studies of educational technology. Critical theory opens up ways to question why inadequately studied issues have gained less or no attention. The central argument of critical theory is that all

knowledge, even the most scientific or “commonsensical,” is historical and broadly political in nature. Miller and Brewer (2003) explain in “The A-Z of Social Research” that the essence of critical theory lies in its interest in the ways people think and act and how social circumstances influence those thoughts and actions. Critical theory acknowledges the crucial influence of socio-economic relations over the way people think about and approach the world in any given society. Central theme of critical theory is that research is a political activity, working either for or against the status quo.

As mentioned above, instrumental rationality shaped the way knowledge has been produced in the field of educational technology; however, critical theory sees instrumental/technology rationality as one of the most oppressive features of contemporary society (Kincheloe & McLaren, 2000, p. 282). In line with the assumptions of critical theory, the prevalence of instrumental rationality in the field need to be questioned. In addition, critical theory questions the notion of “power”. In this study, Foucault’s perspective on power is adopted. Even though in his early works he defined power as a negative and oppressive thing, later he recognized power as productive and positive force in the society. According to Prado (1995) Foucault noted that power operates visibly and invisibly through expectations and desires and helps shape subjective feelings and beliefs, our subjectivities. Moreover, Foucault claims that in the social sciences, where the object of investigation is another human being, the process of knowledge production cannot be socially neutral (Gordon, 1980).

As this study adopts critical theory as a theoretical lens, there is a need to explain the point of view of a critical researcher. Amin and Thrift (2005) proposed a four-point agenda for critical scholarship. Their first argument is that research should be considered as a political activity that means a powerful sense of engagement with politics is important. The second argument is there should be a consistent belief that there must be better ways of doing things, and this perspective should be applied to research practices. Thirdly, they note that a critique of power and its exploitation that prevents better ways of doing things from existence is required. Lastly, researchers need constant and ongoing critical reflexivity toward their practices. They disagree a

position that advocates having one and only answer to the questions. It is apparent that we, educational technologist – either researchers or practitioners- need to accept the challenge to learn from the history of the field. We need reflexive practices. We need to promote critical approaches in the field of educational technology in order to help envision the future and take it further.

After presenting and discussing the factors that have been influential on the way educational technology research topics and methods studied in general, the following section explains this study's context, Turkey case. The researcher purposefully focused on studying educational technology research trends in Turkey, particularly in the context of graduate programs of educational technology through the lens of critical theory for the following two reasons. Firstly, the field's emergence and professionalism took place in the United States of America, and leading professional organizations such as AECT (The Association for Educational Communications and Technology), ASTD (American Society for Training and Development) founded in USA (Seattler, 1991). Correspondingly, discourse of the field has been dominated by USA trends (Hylnka, 2003). However, Eastmond (1999) stated, each country's trends need to be examined in its context, since tools or technologies may be the same while driving forces vary in every context. To get insight into the field of educational technology, it is critical to situate research in its own context including economic, political, and social issues.

Secondly, Educational Technology has been an important area of study in Turkey. Starting from the early years of Republic of Turkey, there have been many attempts to take advantage of technology in education. As Turkmen and Pedersen (2005) stated film strips, laboratory equipment, school museums were used in schools in 1930s. To provide primary education to villagers, in 1940, the Village Institutes whose underlying philosophy was “education in work”, education for work”, and “education with work” were founded (Kocabas, 2017). It could be argued that the Village Institutes held many promises for educating and empowering villagers. However, this project was halted due to political reasons in 1954.

With the developments in microcomputers, Turkish Ministry of National Education enacted policies and took actions to equip schools with microcomputers and train teachers based on emerged needs (Keser & Teker, 2011). In spite of huge investments and high expectations, this movement fail to reach expected success. Sahinkayasi (2008) discussed that this failure stemmed from giving less attention to teacher training and lack of necessary alignments to the curriculum. This failure story presents similar underlying reasons with the cases in the USA as reported by Cuban (1986).

Similar to other countries, distance education received attention of educators and policy makers in Turkey. The first steps in implementing distance education in Turkey were taken in the mid 1950s to educate bank employees by means of correspondence education (Usun, 2004). Later on correspondence education system was extended to other target groups, and used for teacher education as well (Alkan, 1987). Since 1970s, policies regarding integrating technology into education were enacted in Turkey, and considerable investments were made. To illustrate, television was used for teaching literacy and other subjects for different target groups (Pedersen & Turkmen, 2005). The authors noted that this movement was not without its problems; however, the MoNE insisted on using this system chiefly because of the success of small-size projects. During this implementation, teachers' concerns regarding classroom management problems were overlooked.

In 1981, the first Open Education Faculty was founded in Anadolu University which has offered 2- year and 4-year degree programs (Gelişli, 2015). Since then, many other distance education programs were opened in different universities. Yavuzalp et. al. (2017) reported that 98 universities in Turkey have distance education programs. It is apparent that distance education has an important place in Turkey; therefore, many researchers study on related issues. In addition, the Ministry of National Education has emphasized transforming education through technology for a long time, and initiated numerous nationwide projects in line with that purpose. Topuz and Göktaş (2015) conducted a study to analyze nationwide projects to use technology effectively in Turkish Education System. Their findings revealed that more 30 years there have been huge investments in effective technology use in education in Turkey; however, these

projects were not adequately analyzed whether they achieved the purposes or not. Besides, educational technology undergraduate and graduate programs operate in several higher education institutions. Thus, understanding current state of the field in the context of Turkey and investigating the reasons behind it is of great importance.

There have been studies in national and international literature that aim to explore the trends in the field. When the findings of content analysis and trend studies which aim to reveal how educational technology research topics and research methods change over time by examining professional literature of the field analyzed, it is seen that quantitative research methods have always constituted the major amount of research methods employed in the studies; on the other hand, number of qualitative researches increased recently (Caffarella, 1999; Masood, 2004; Hew, Kale, & Kim, 2007; Ugur-Erdogmus, 2009; Akca-Ustundag, 2009; Goktas et. al, 2012). Setting from this point, dominance of a research tradition over the others need to be critically questioned. It is necessary to question what issues have been obscured due to dominance of quantitative research traditions, and in the light of these findings, it is of great importance to question how this tradition has affected the knowledge creation in the field. The point here is not to open a space for the well-known quantitative – qualitative dilemma; rather, to explore how dominant research methods contributed to development of the field, and uncover what issues have been left unquestioned as well.

The studies on research trends in the field chiefly asked descriptive questions. However, current study goes beyond descriptive data by asking “why those trends occur” to faculty members in the graduate programs of Educational Technology. Asking faculty members’ opinion have much to add literature of the field for two main reasons. Firstly, faculty members have agency role to shape research practices so that their agency may influence the way graduate students’ knowledge creation. Secondly, faculty members with the experience of supervising theses can provide us expert’s perspective to the field. This study is intentionally delimited to graduate programs of educational technology where extensive and systematic research studies have taken place.

1.2 The Significance of the Study and Potential Contributions

Technological advances inevitably shape our daily lives and professional practices of educators. Here we need to take a moment, and think about whether technology is an opportunity or an imperative coming from different actors. It is apparent that we, educational technologist – either researchers or practitioners- need to accept the challenge to learn from the history of the field by means of reflective practices and criticizing why thing happens in the field. From the researcher’s perspective, criticism does not necessarily mean negative, rather involves an internal review that reveals external dominance, inconsistencies. The researcher’s explicit assumption on this study is that she is skeptical on technology, rather than being technophobic or technology enthusiast.

This study aims to uncover factors that shape educational technology research practices in the context of Turkey. The first step in the study is to present how educational technology research methods and research topics have evolved since graduate programs of the field were initiated in order to provide a rich description of trends in the field in Turkey. After setting the ground, this study seeks to understand why those trends occur from the perspective of faculty members affiliated to educational technology graduate programs through the lens of critical theory.

This study intentionally focuses on Turkey case, particularly research practices in graduate programs, for two main reasons. The first reason is that, as mentioned earlier, the field of educational technology is dynamic and keeps evolving, and has been open to influences coming out of the field. The second reason is that the field of educational technology has great importance in Turkey. Since 1998 with the lunch of Basic Education Project Phase funded by World Bank, Ministry of National Education invested huge amounts of money in integrating information and communication technologies into schools (World Bank, 2003). Turkish government allocated more than \$1billion for equipping schools with technology and providing necessary infrastructure for this movement (Akkoyunlu, 2002). FATIH project is one another big movement to integrate technology into schools. This project also has an enormous

budget with the aim of providing “Smart Classrooms” for elementary and secondary schools in Turkey. In the scope of this project more than 500.000 classrooms will be equipped with digital technologies and more than 600.000 teachers will have in service training either face-to-face or online. The MoNE allocated \$1.9 billion for three-year cost of FATİH project.

There have been systematic studies on how educational technology research topics and research methods change over the time in international and national literature. These studies mainly focus on how trends change over time, but they have not questioned why those trends occurred and without adequate theoretical background. It is obvious that there is an urgent need to question why those research method and research trend patterns occur over time. Therefore, in this study the researcher employs critical theory in order to explore why these trends occur.

Critical theory is nearly absent from any debates about foundations of the field, and understanding how the field has been shaped. Thus, a critical analysis of current educational technology trends and development in Turkey by employing critical methodologies will be a first step in understanding how educational technology trends and developments are being shaped and the way scholars produce knowledge will benefit the educational technology researchers and practitioners in Turkey. That makes this study timely and might be unique in this sense.

The significance of this study is to contribute knowledgebase for the following groups:

- Educational Technology Graduate Students: With the most current and comprehensive findings, this study provides a big picture of the field’s evolution in Turkey. Not only does it highlight signified research topics and research methods but also brings light to silenced issues in the examined educational technology literature over the years. In addition, it attempts to unfold the factors that have been leading the way knowledge is created in the field. Therefore, the findings of this study can benefit graduate students in terms of getting insight into what issues need more attention and how those issues can be studied in order to take ET further in Turkey.

- Educational Technology Scholars: The aim of scholarly work is to contribute to knowledgebase of the field in which scholars study and supervise graduate students. This study has also methodological significance since it employs critical research method into educational technology research. It might raise awareness of using alternative research methods.
- Policy Makers: The findings of this study could inform policy makers about which issues need to be emphasized in the field. They make take actions for encouraging and supporting researchers to study on the issues that have received less attention.
- Educational Technology Practitioners: This study can encourage practitioners to question their existing practices, and think about how they can better serve for their target groups.

1.3 The Purpose of the Study

The first aim of this study is to explore the current research trends in the context of graduate programs in the field of educational technology in Turkey, and reveal the possible factors that influence these research trends from the perspective of faculty members working at educational technology graduate programs. The second purpose of this study is to understand faculty members' expectations for the future of the field and their suggestions for improving the field.

Educational technology's research topics and research methodologies tend to evolve as new technologies emerge and strategies to incorporate them in learning settings change. Therefore, to examine research topics and methodologies in academic field of educational technology in certain periods is useful for both researchers and practitioners in the field in terms of understanding the field's current state and provide a ground for discussion about the state of the field.

As the field of educational technology is relatively a new field, we may not have a scientific basis for predicting its future well. Information about the future of educational technology is important for what we do today. It can help scholars and practitioners determine the focus of our research and university curricula in educational technology.

1.4 Research Questions

The overarching research question this study aims to answer is *what are educational technology research trends and developments in the context of graduate programs in the field of educational technology, and where is the academic field of educational technology heading in Turkey*. The research questions that guide this study are listed below:

- 1) What are the major trends of research in educational technology graduate programs in Turkey?
 - a) What are the major trends of research topics in the Master's and doctoral theses?
 - b) What are the major trends of research methods in the Master's and doctoral theses?

- 2) What are the possible factors that have influenced these research trends in academic field of educational technology from the perspective of faculty members?

- 3) What are the opinions of faculty members about these trends and their predictions for the future?
 - a) What are the opinions of faculty members about the trends of research topics and methods in the examined theses?
 - b) What do they predict for the future of the research trends in the field?

1.5 Definition of Terms

Educational technology: The study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources.” (Januszewski & Molenda, 2008, p.2)

Critical theory: The central argument of critical theory is that all knowledge, even the most scientific or "commonsensical," is historical and broadly political in nature. Critical theorists argue that knowledge is shaped by human interests of different kinds, rather than standing "objectively" independent from these interests

Critical Methodology: The social science operationalization of critical theory. It is characterized as an inquiry concerned with empowerment and emancipation, interrogation of power and culture, and a commitment of linking theory to practice.

Instrumental rationality: A specific form of rationality focusing on the most efficient or cost-effective means to achieve a specific end, but not in itself reflecting on the value of that end. Instrumental rationality tends to focus on the 'hows' of an action, rather than its 'whys'.

1.6 Overview of the Dissertation

Chapter II presents a review of the literature regarding to the study. Chapter III explains the method and procedures of the study. Chapter IV presents findings of the study. Chapter V provides a summary, discussions, conclusions, and recommendations. The study concludes with references and appendices.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

This chapter aims to summarize and synthesize the relevant literature with regard to the research questions posed in the previous chapter. Historical and theoretical perspectives of the study, and relevant research studies were reviewed in this section. Firstly, an overview of historical developments and the definitions of the field of educational technology were presented, and criticized. Secondly, critical theory is introduced as the theoretical framework of the study. Lastly, the researcher presented related research studies in which educational technology research trends were analyzed.

2.2 An Overview of Historical Developments in the Field of Educational Technology

The field of educational technology, engaging with both theory and practice, is a dynamic emerging field (Januszewski & Molenda, 2008), and evolves with the influence of various factors including historical developments, emerging technologies; and, paradigm shifts in theories and approaches to scientific inquiry (Ely & Plomp 1996; Reiser, 2007). It is a profession that aims to implement the theory, intellectual technique, and practical applications of educational technology (Reiser, 2001, p.3). This field is a relatively young field, and professionalism of audio-visual instruction, which is considered as the origin of current study of Educational Technology, dates back to 1950s. Since its professionalism, the scholars in the field have endeavored to

define the field. Scholars with different perspectives either on nature of technology or the nature of the field struggled to define it in different ways.

Ely and Plomp (1996) noted that the definition of the field of educational technology should embrace its complexity. Likewise other social sciences and applied social sciences, defining the field of educational technology has been a challenge for the individuals in the field, since social sciences take into account the social context of study as well; whereas, the natural sciences mainly focus on the results of experiments (Luppicini, 2005).

Before presenting the definitions of educational technology, a short history of the field is in order, since technological and historical developments have been influential on how the field has been defined. To briefly overview the history of educational technology, we can start with the era after 1900's; even though as Seattler (1990) stated that the forerunners of educational technology could be even seen in cave paintings. The reason is that major developments, which gave rise to emergence of the field, began to appear in early decades of 1900's; and pre and post-World War II periods had dramatic influences on the field's development.

2.2.1 Visual Instruction Movement

In the early decades of twentieth century, educators started to use media for instructional purposes in USA (Seattler, 1990). School museums equipped with films, slides, and photographs were used for instruction (Seattler, 1968, as cited in Reiser, 2007), and considered as supplementary curriculum materials as a means of presenting instruction (Reiser, 2007). This movement was named as visual instruction. When motion pictures entered into classrooms and became a medium for regular instruction, some scholars were thrilled with its capability to revolutionize the education. Thomas Edison, in 1922, anticipated that educational films would completely replace the books, they could be used for every branch of human knowledge; thus books would be obsolete (Cuban, 1986). However, as Cuban (1986) stated that Thomas Edison's prediction for films never came true because of certain reasons which will be articulated in the following sections of this chapter in detail.

2.2.2 Audiovisual Instruction

With the technological advancements in radio broadcasting, sound recording, and sound motion pictures; interest in instructional media increased; therefore, the scope of visual instruction movement broadened, and it was renamed as audiovisual instruction (Reiser, 1987). Audiovisual instruction was utilized to provide instruction / training for groups or bigger audiences in accordance with theoretical assumptions of behaviorism (Lumsdaine, 1996). Edgar Dale's Cone of Experience, which is a visual model that suggests classification of mediated learning experiences from concrete to abstract, guided the studies on audiovisual instruction.

In this period, educational radio highly grasped the attention of researchers and educators; hence, those enthusiasts expected educational radio to revolutionize education. In the early years of educational radio there were hardware problems and high prices were seen as an obstacle to use it widely; however, over time hardware problems were resolved or at least improved, and prices fell sufficiently (Cuban, 1986). On the other hand, according to Cuban educational radio movement get financial support from State Departments of Education in USA; and comparing to educational films, educational radios were more accessible. Yet, this dream did not come true either, as that was the case in educational films, in spite of more accessibility and support (Reiser, 2007 & Cuban, 1986). In other words, with the unfulfilled promises of educational radio, another failure story was added to educational technology literature.

Cuban (1986) criticized the survey studies which investigated usage of educational radio for educational purposes, since even turning on the devices were counted as a usage for educational purposes. The author indicated that those studies lack questioning whether educational radio was used for educational or instructional purposes or not. The availability and accessibility of media were taken as an indicator of successful use. The number of research studies on educational radio dramatically decreased after the emergence of instructional television. It is possible to argue that one fashion became fads.

2.2.3 Military's Influence on the Field of Educational Technology

As mentioned earlier in addition to technological advancements, historical events had influence on the way the field was shaped. The onset of World War II necessitated training thousands of military staff rapidly and effectively in a very short time period, since they were expected to perform the large number of tasks to fulfill their missions and to survive (Shrock, 1995 & Seattler, 1990). Hence, the huge training demand coming from military dramatically impacted the evolution of the field (Shrock, 1995; Reiser, 2007 & Seattler, 1990). In the context of a war, the military wanted to benefit from audiovisual instruction movement for training purposes. Lumsdaine (1996) acknowledged that use of motion pictures for instruction was chiefly because of extensive usage of training films during World War II. It is reported that United States Army Force employed training movies considerably, and spent \$1 billion on training films (Olsen & Bass, 1982 as cited in Reiser, 1987). Similar to military, industrial sector showed interest in audiovisual instruction as well.

Seattler (1990) stated that during World War II years, a period of expansion began in industrial and military sectors with four important developments:

...the establishment of training programs for effective technology instruction, the application of technology of instruction based on previous scientific knowledge, emergence of official military policy that encouraged development of instructional materials, media and approaches, and allocation of unlimited financial resources (p.178).

Instructors working at military stated that those films were highly beneficial for them and considered films as effective and efficient training tools for large groups with diverse backgrounds, even though the conditions were not appropriate to conduct extensive research on the effects of films (Reiser, 2007). Given that people perceived audiovisual devices as successful for training problems in military, after wartime the interest in audiovisual instruction started to ascend. Military and industrial interest in educational technology unquestionably led many developments in the field and provided unlimited resources for the researchers. Noble (1991) acknowledged that:

...military agencies have provided three fourths of all funding for educational technology research over the last three decades, and within government agencies, the military spends seven dollars for every civilian dollar spent on educational technology research (p.2).

In post-World War II period, identifying principles of learning to design audiovisual material was the major efforts of researchers. However, as Reiser (2007) stated that those research findings did not affect educational practices since many practitioners ignored the findings or some of them were not informed.

2.2.4 Instructional Television

In the period of 1954 and 1983 television was used for instructional purposes. As educational radio failed to meet expectations of its enthusiasts, consequently lost its popularity; instructional television became the new hope for revolutionizing education. Due to its superior attributes comparing to educational radio, instructional television received support from both industry and government in USA (Cuban, 1986 & Reiser, 2007). To exemplify, The Ford Foundation provided substantial financial support for equipping schools with instructional television and funding for related research. In addition, Federal Communication Commission in USA provided supported for using television in the classroom.

Despite the great support, instructional television did not meet the expectations of its advocates and investors similar to instructional films and educational radio. The reasons why instructional television was not adopted extensively were linked to teachers' resistance to use it; and the expense of installing and maintaining system (Reiser, 2007).

However, Cuban (1986) argued that this failure was not due to teachers' resistance; rather, in early stages teachers were not involved or barely consulted and non-teacher reformers utilized a top-down approach. As a result, one more failure story accumulated in educational technology literature in spite of huge investments and vigorous efforts.

2.2.5 Computers

When instructional television became less popular, computers - the next technological innovation - attracted the attention of many educators. Even though computers were first used in education in the 1950s, it became prevalent in the 1980s when microcomputers were developed and became available for public use (Reiser, 2007). Computers' attributes such as affordability, being appropriate for using on desktops, and its high capability to perform tasks became great motivations to introduce them into education and classrooms.

Not surprisingly, predictions very similar to earlier technologies used for education were also made for computers. Boody (2001) expressed that in the early 1970s it was anticipated that computers would revolutionize learning soon. Furthermore, the way computers were introduced to schools was the similar. Cuban (1986) claimed that cultural and political forces put pressure on schools to adopt computers just as it happened in earlier technologies. After presenting a brief history of the field in general, historical developments in Turkey are presented in the following section.

2.2.6 Historical Developments in the Field of Educational Technology in Turkey

It is possible to trace back to Ottoman Empire when we overview the history of Educational Technology in Turkey (Göktaş et. al. 2009); however, the major developments in the field of Educational Technology in Turkey emerged after the foundation of Republic of Turkey (Reisoğlu et. al., 2013). Setting from this point, the history of the field in Turkey is presented the era after the 1920s.

2.2.6.1 The Early Years of Republic of Turkey

In the early years of Republic of Turkey, several initiatives were lunched in an attempt to restructure the education system from the scratch. A national education system was designed and implemented, and prominent educational researchers from abroad were invited to the country to evaluate education system in Turkey and provide suggestions for Turkish Education System. John Dewey was one of the invited prominent

researchers, and he focused on education system in general (Reisoğlu et. al., 2013). Dewey recommended that students should be provided with the opportunities that allow them to experiment and apply the knowledge they gained in the schools, how to transfer that knowledge into daily life, and mobile exhibitions in order to show machines and devices used in industry to students and public (Doğan, 2010, as cited in Reisoğlu et. al., 2013). Due to the shortcomings in resources and lack of a systematic approach, the recommendations of Dewey and other prominent researchers were not realized precisely in terms of educational technology (Reisoğlu et. al., 2013). Turkmen and Pedersen (2005) reported limited resources of technological teaching materials such as film strip projectors, laboratory equipment, and maps in the schools in 1930s. In that period, instructional radio and school museums were the other technologies used in the schools.

2.2.6.2 Village Institutes

One of the major developments that took place in Turkey from the late 1930s to the mid 1940s was Village Institutes in order to transform countryside by Ministry of National Education (Karaömerlioğlu, 1998). This project aimed to provide primary education to villagers in order to construct modern Turkey, and put emphasis on “education in work”, “education for work”, and “education with work” (Kocabas, 2017). In line with its purposes, this project had unique characteristics in terms of its mission and teaching methods. To illustrate, Binbaşoğlu (1995) reported that project based instruction was applied in Village Institutes (as cited in Reisoğlu et. al. 2013). Furthermore, Kocabas (2017) stated that the system provided opportunities for students to actively participate to education and developing critical thinking skills with the intention of a creative society. It could be argued that this idea was ahead of times. Even though Village Institutions held many promises for villagers and Turkish society, they were closed in 1954 due to political reasons.

2.2.6.3 Distance Education

The discussion about distance education in Turkey started in the late 1920s in an attempt to increase the literacy rates in the country aftermath of World War I (Usun, 2004 & Gelişli, 2015). A correspondence education system was considered as a remedy to teach literacy; however, this idea was abandoned due a common belief that people would not be able to learn teaching and writing without teacher. In that time period, the other countries had already started correspondence education (Usun, 2004).

With the influence of developments in the field of Educational Technology in the USA, starting from 1950s; instructional television, radio and audio-visual materials were used in education in Turkey (Reisoğlu et. al. 2013). In this period, mass education via distance education came into prominence due to increasing demand for accessing education. In Turkey, distance education has become an important area of study. Usun (2004) stated that in Turkey the first distance education project was initiated in 1956 at Research Institute of Bank and Trade Law in Ankara University (p. 261). He pointed out that it was the first step in correspondence education system in Turkey which aimed to educate bank employees.

In 1961, The Center for Education through Letters was established in Ministry of Education in order to provide opportunity for those who wish to complete their secondary education without attending school. After then, in 1966 Advanced Teacher Education School was established. YAY-KUR (Education through Letters) was implemented as a correspondence education (Alkan, 1987). It is important to note that expected efficiency and achievement were not reached in this system (Usun, 2004). Similarly, Alkan (1987) reported that a study conducted to understand administrators', instructors', and students' opinion about correspondence education. This study revealed that this system needed considerable improvements and not promising as it was. He further argued that the attempts to implement distance education in Turkish Education System were far from meeting society's facts and did not have scientific base until the late 1980s.

In those years, Turkish Government took action for keeping up with technological developments all around the world and policies were enacted accordingly. Yıldız et. al. (2010) reported that in 1960-1980 period State Planning Organization (DPT) gave place to technology policies in 4th 5 Year Development Plan for the first time. This plan emphasized the equal opportunities to benefit from education and to align education with rapid developments. In the following years, to increase the literacy rate in Turkey, instructional television was utilized in 1981, and this movement was supported by the government. Usun (2004) noted that the program was successful in terms of increasing the literacy rates.

The huge investments in audio discs, educational films, and other instructional materials were made in 70s (Schramm, 1977, as cited in Usun, 2004). However, Schramm did not mention about increase in academic achievement as a results of these investments. In 1980s, the investments in technology for schools dramatically increased all over the world and in Turkey as well. Research studies were funded by technology companies for evaluation of media effects which would provide a base for future planning.

2.2.6.4 Computer Aided Instruction

Keser and Teker (2011) stated that the first official initiative to use computers in schools was taken in 1984 in Turkey. Computer aided instruction was initiated in Turkey 1100 microcomputers were purchased in that year (METARGEM, 1991). Engin, Tosten, and Kaya (2010) expressed that the questions on how to use computers in education, the financial issues regarding using computers in schools, and how to educate teachers and administrators for this innovation arose. The introduction of computers into schools necessitated training of teachers on computers. In response to this need, the MoNE initiated Computer Aided Education Program in order to train teachers on computer literacy and programming, and it was intended that trained teachers would train more teachers. Nevertheless, due to lack of trained teachers and failing to integrate the software with curriculum, the project could not be realized at its expected levels (Turkmen & Pedersen, 2005). Beginning from 1980s, huge investments were made to equip schools with computers. The problem was, as

Sahinkayasi (2008) argued, MoNE mostly focused on hardware component but gave less attention to teacher training and aligning curriculum with technology.

2.2.7 Definitions of the Field

Scholars and professional organizations in the field have struggled to define the scope and purpose of the field over the years. Even though some professional communities or individuals attempted to define the field, definitions made by AECT (Association for Educational Communications and Technology) have been widely recognized in professional community of educational technology since AECT, previously known as Department of Audio Visual Instruction (DAVI), has been considered as the main professional community.

Historical developments have shaped how professionals define the field of educational technology. In 1963, AECT declared the first definition of the field, and it was considered as a departure from the earlier traditional view that chiefly focused on media. This definition is:

“Audio Visual Communication is that branch of educational theory and practice primarily concerned with the design and use of messages which control the learning processes. It undertakes: a) the study of unique and relative strengths and weaknesses of both pictorial and non-representational messages which may be employed in the learning process for any purpose; and b) the structuring and systematizing of messages by men and instruments in educational environment. These undertakings include the planning, production, selection, management, and utilization of both components and entire instructional system. Its practical goal is the efficient utilization of every method and medium of communication which can contribute to the development of the learners’ full potentials” (Ely, 1963, as cited in Januszewski, 1994).

AECT's 1977 definition is "Educational technology is a process for analyzing instructional problems and devising, implementing, evaluating and managing *cost-effective* solutions to those problems in all aspect of human learning".

In 2001 AECT refined the definition of the field, according to this definition:

"instructional technology" is the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning... The words "instructional technology" mean a discipline devoted to techniques or ways to make learning more efficient based on theory but theory in its broadest sense, not just scientific theory.... Theory consists of concepts, constructs, principles, and propositions that serve as the body of knowledge, including resources that are sources of support for learning, including support systems and instructional materials and environments. ... The purpose of instructional technology is to affect and effect learning. (Association for Educational Communications and Technology, 2001,p. 3)

In the relatively short period of its evolution, the field of educational technology has taken on wide range of meanings. The field has its roots in empiricism, psychology (learning theories), management techniques, and system theory. Therefore, this diversity has resulted in some confusion about purposes and boundaries of the field (Gentry, 1995). Based on this notion, Reiser (2001) argued that the question of "What is the field of instructional technology" is difficult to answer due to changing and evolving nature of the field.

Developments and evolutions in digital technologies inevitably influence the way people live; thus practice of educational technology. Even though educational technology is known for its strong orientation to practice (Richey, 1997), the works of early theoreticians have shaped new developments. To exemplify, Dale's "cone of experience" is considered a theoretical base for current virtual reality studies and constructivist movements (Solomon, 2000). In addition, learning theories coming from psychology chiefly shaped educational technology's body of knowledge. Gur and

Wiley (2009) acknowledged that many professionals have assumed psychology as natural foundation of the field, and instructional design is recognized as “applied educational psychology”.

The eclectic knowledge base of educational technology stemmed from diversity of individuals from learning theories, media studies, psychology, engineering, and lately system theory (Muffeletto, 2001). The immense advancements in the field have been adhered to this diversity by Reigeluth (1989). However, a counter argument proposed by Gentry (1995), and he argues that in the relatively short period of its evolution, the field of educational technology has taken on a surprisingly wide range of meanings and this has resulted in some confusion about purposes and boundaries of the field. Based on this notion, Reiser (2001) raised the question of “What is the field of instructional technology” and he argues that it is difficult to answer due to changing and evolving nature of the field. Thus, new ideas and innovations affect the practices of individuals in the field, changing – often broadening – the scope of their work. Similarly, Spector (2004) criticizes eclecticism in the field by saying: “*We are so eclectic that we cannot even agree on our most basic terminology*”.

According to Fainloch (2007) the conceptualizations about technology and education follow a socio- cultural historical line, and conforms diverse approaches for the studies and tasks of educational technology. In line with this statement, educational technology has different meanings for different people given the different perspectives on what the field is, and what it should be dealing with. At the first times of the professionalism, the field was named as audio-visual instruction. As Silber (1978) noted, Finn, who is regarded as the founder of the field, strongly urged audio-visual instruction community to re-name the field “instructional technology” in order to reflect a broader concept of the field in the early 1960s when the profession was still called “audio-visual instruction”. In 1970, the field named “educational communications and technology” reflecting the Finn’s perspective.

The field of educational technology has undergone changes in definition and scope since then. According to Ely and Plomp (1996), educational technology is considered

as a process for analyzing instructional problems and devising, implementing, evaluating and managing *cost-effective* solutions to those problems in all aspect of human learning. This definition was proposed by AECT (Association for Educational Communications and Technology) in 1977. From another perspective, it is the process of designing curricula and instruction following system models.

In 1994 AECT redefined the field, and Seels and Richey (1994) stated that “Instructional Technology is the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning.” This definition reflected AECT’s, thus professional community of the field’s, changing political stance and understanding of the field comparing to 1977 definition. In 2008, AECT again redefined the field in line with the changes in AECT’s political stance, developments in technology, theory and research practices. The latest definition of the field indicates that “Educational Technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources.” (Januszewski & Molenda, 2008, p.2).

Even though the latest definition reflects basics of the former definition, it is apparent that there are major differences. In the latest definition, similar to former one, one can see the emphasis on theory and practice, and using theories and models. However, domains of the field (design, development, utilization, management, and evaluation) were not explicitly pronounced. Rather, the terms creating, using, and managing are preferred. That is to say, a broadened approach to define the field is accepted. One important issue in the latest definition of the field is replacing the word “Instructional” with “Educational”. This is also an evidence for broadened approach to the field.

The action of struggling to redefine the field could be critically questioned in order to better understand in what field we are working. According to Fainloch (2007) educational technology has lacked clear and defined parameters for its conceptualization, rigorous configuration of its field of study was prevented, which is why its work, developments, and achievements have been random and even

contradictory. When the history of educational technology critically examined, one can easily notice that different factors have been very influential on shaping the field.

One of the most influential factors that shaped the field of educational technology has been Military. Similarly, computing technology in particular, and engineering in general, have long and symbiotic relationship with the military (Broomly & Apple, 1998). Apple (1995) acknowledged that with the launch of Sputnik and National Defense Education Act (NDEA) of 1958, military interest played an utmost role in education. Military's needs on *engineering education* had directed mostly technical concerns.

Studies in the field of psychology have also shaped theory and practice of educational technology. Seattler (1990) acknowledged that behaviorist and cognitivist traditions were the main actors in recognition of educational technology as a distinct field. He further explained that behaviorism was the dominant theoretical perspective in the field of educational technology until cognitivist approach became popular. He also noted that many developments in the field accomplished by following behaviorist tradition, to illustrate, programmed instruction, computer assisted instruction, early conception of instructional feedback and individualized instruction can be listed as examples of this tradition. Similarly, cognitivist tradition dramatically influenced educational technology studies; specifically instructional design process which is considered as a subset of study of educational technology. Gur and Wiley (2009) criticize the acceptance of psychology as a natural foundation of educational technology, and point out that the centrality of psychology has not been intensively examined yet. This critique is important since the centrality or dominance of psychology has influenced the way educational technology research has been practiced, the way knowledge has been produced. That is to say, this domination has affected which issues have been signified; therefore, some issues have been overrepresented while the others have been underrepresented in the literature. As a result, Gur and Wiley (2009) acknowledge that, by echoing the perspective of Apple (1996), psychologism signifies psychological issues; thus, critical issues such as political, societal, and philosophical issues become unquestioned.

In addition to influences of psychology and military; governments' policies, grants and corporations have been crucial actors in leading developments in the field. Clark (1977) drew attention to domination of government agencies and large corporations over how researches were practiced in early stages of the profession. He clarifies his argument by giving an example of programmed instruction. He pointed out that some researchers' extravagant and premature promises about programmed instruction would teach much better resulted in getting funding from grant agencies. Accordingly, the case of instructional television can be also taken as an example for Clark's argument. Instructional television, as a medium for delivering instruction, was perhaps the most important factor to affect the audio-visual movement in the 1950s. Even though there had been a number of instances of using instructional television for instructional purposes prior to 1950s, there was a tremendous growth in the use of it. Ford Foundation Funding and Federal Communications Commission were the stimulators of this big growth (Seattler, 1991). However, instructional televisions become obsolete in a relatively short period. Moreover, Clark criticized the overrepresentation of "significant difference" studies in the leading journals for the sake of legitimizing technophiles enthusiasm on using technology, and underrepresentation of the non-significant studies.

Nichols (1991) explained the relationship between educational technology and society; educational technologists often react to social imperatives, especially to buy hardware. From the early educational technologies to contemporary multimedia and information technologies that have accompanied the rise of the "information society", educational institutions have always had to respond evolving technologies (Broomly, 1995).

Almost two decades later, Robleyer and Knezek (2003) pointed out the pressure coming from policy makers and from within the field itself, technology research has been in need of a rationale sufficient to justify its high costs and complexity. They propose that as a primary task of new research agenda should be to address the question of why to use technology-based methods. Although psychological traditions, corporations, and military contributed significantly to recognition and development of the field, one might not assume that all those contributions have become inherently

good for the field; in other words, as discussed above it is important to question their effects, and notice the problems inherent to them.

To this point, historical developments in the field of educational technology is presented, changes in the definitions of the field, and its evolution and the factors that have been influential on shaping the field's theory and practice are explained. The following section presents the theoretical framework of the study.

2.3 Critical Theory

Critical theory usually refers to tradition developed by Frankfurt school (Kincheloe & McLaren, 2000). They argue that it is difficult to explain what exactly critical theory is because there are many critical theorists, the critical tradition is always changing and evolving, and critical theory attempts to avoid too much specificity (p. 281). Critical theory analyzes competing power interests between groups and individuals within a society, identifying who benefits or loses, or which issues are overrepresented or underrepresented.

Miller and Brewer (2003) explain in "The A-Z of Social Research" that the essence of critical theory lies in its interest in the ways people think and act and how social circumstances influence those thoughts and actions. They expressed that from Hegel's perspective critical theorist value critical analysis which allows moving towards an authentic knowledge of reality. Critical theory recognizes influence of social-economic relations over think about and understand the world. The central argument of critical theory is that research is a political activity, and it can work for or against status quo.

For critical theorists, it is not enough to simply discover and record social behavior. For social research to be useful, the further stage of explaining that behavior in terms of socio-economic and cultural context is essential, that is to say, social research should go beyond "fact gathering". According to Miller and Brewer (2003) critical theory's assertion is that social research will always be animated by values, that means

it is impossible to conduct a value-free social research. Therefore, social researchers need to clarify and explicate the values under which they are studying.

Critical theory sees instrumental/technology rationality as one of the most oppressive features of contemporary society (Kincheloe & McLaren, 2000, p. 282). Instrumental/technology rationality is more interested in method and most efficient or cost effective means to reach to a specific end than purpose. However, it is not interested in reflecting on the value of that end. Critical theorists claim that instrumental/technology rationality is more interested in method and efficiency than in purpose. It delimits its questions to “how to” instead of “why should”.

Instrumentalism provides framework for many of the social sciences and the field of educational technology is no exception. In order to reveal how instrumental rationality has swept the field of educational technology, Ely (1998) summarizes the findings of Winn’s (1997) study on instructional technology curricula and concludes that there is a heavy emphasis on “how to do it” and less on “why to do it”. The need for instructional technologists to be trained in the practical skills of doing instructional design, message design, writing software, and so on is a major force in shaping any instructional technology curriculum. Accordingly, educational technology has struggled to find answers to “how to” questions rather than questioning “why should” for many years.

Feenberg (2002) claimed that instrumental theory offers the most widely accepted view of technology. It is based on the commonsense idea that technologies are “tools” standing ready to serve the purpose of their users. Technology is deemed “neutral”, without valuative content of its own. The neutrality of technology means:

1. “Technology is indifferent to the variety of ends it can be employed to achieve. It is unbiased and seen as a pure instrumental means without any embedded culture values.
2. At least in the modern world, technology is indifferent to politics and not prejudiced toward capitalist, socialist, or other types of societies. Technology

is not intertwined with other aspects of the society in which it is designed and used. A computer is a computer, and such tool is useful in any social and political context.

3. This socio-political neutrality of technology is usually attributed to its rational character and the universality of the truth it embodies. The development of technology is based on verifiable causal propositions. To the extent that such propositions are true, they can be applied to other social and political contexts. This implies that technology tools will serve the same purposes regardless of the context of its usage.

4. The universality of technology also means that the principles of accessing its characteristics and impact are context independent. Technology is neutral because it stands essentially under the very same principle of efficiency in any and every context. If technology works in a certain place, in a certain time, and under a certain society, then it will work in different places, different eras, and different civilizations” (pp. 5–6).

In his well-recognized book “Critical Theory of Technology”, Feenberg (1991) started his book with this question: Can technology be fundamentally redesigned to better serve its creators? Then, he discussed that this question is not a merely technical one but concerns a fundamental issue in social philosophy, the neutrality of technology and related theory of technological determinism. If technology is neutral, then its immense and often disturbing social and environmental impacts are accidental side effect of the progress.

As mentioned, critical theory of technology rejects the notions of neutrality, being value-free and socially blind. From this perspective, technology cannot be disconnected from cultural knowledge and values, beliefs and desires. According to Feenberg (1991) technology provides the material framework for modernity. That framework is no neutral background against which individuals pursue their conception of the good life, but instead informs that conception from beginning to end (p.19). Apple (2001) argues that by thinking of technology in this way, by closely examining

whether the changes associated with "technological progress" are really changes in certain relationships after all, we can begin to ask political questions about their causes and especially their multitudinous effects. Whose idea of progress? Progress for what? And fundamentally, who benefits?'

The literature of educational technology has shown many examples of failure of technology in education. Research has documented unfulfilled promises of technology in education to improve teaching and learning, and transform classrooms (Cuban 1986, 2001). Among the issues related to reforming schools through technology, the education community's assumptions about the nature of technology and the underlying ideologies are examined by only a few scholars. Bowers (1988, 2000) discussed a danger of viewing technology as merely a neutral tool and students as autonomous individuals. Robertson (2003) argued that teachers' and policy-makers' enthusiasm for integrating technology in education was based on a naive faith in technology.

In addition to instrumental / technology rationality, critical theory also question the notion of "power". In this study, Foucault's perspective on power is adopted. Even though in his early works he defined power as a negative and oppressive thing, later he recognized power as productive and positive force in the society. According to Prado (1995) Foucault noted that power operates visibly and invisibly through expectations and desires. It operates visibly through formal, public criteria that must be satisfied. It operates invisibly through the way individuals (teachers, university-based educators, administrators, for example) think of themselves and act. Moreover, Foucault claims that in the social sciences, where the object of investigation is another human being, the process of knowledge production cannot be socially neutral. Shutkin (2004) revives Foucault's perspective on power in scope of educational technology discourse. To Foucault, power needs to be considered as a productive network.

Thus far, the researcher attempted to make an introduction to critical theory by setting its fundamentals, and then explained how critical theory conceptualize instrumental / technological rationality and power. In the following section, the researcher critiques

domination of psychology and technological rationality over the field of educational technology using the lens of critical theory.

Given the psychological tradition and domination of objectivism, educational technology has been steered by instrumental and technology rationality. Instrumental rationality refers to objective form of action that treats everything simply as a means to end, and aims to find most efficient ways to reach certain ends. In educational technology literature effectiveness and efficiency have been mostly discussed and used phenomenon. Effectiveness and efficiency terms were transferred from the jargon of business. They reflect an instrumentalist approach, which means the practices of educational technology focus only on achieving certain ends, but ignore the process. Postman (1996) claims that in *The End of Education* “we instructional technologists are professional, consumed by our expertise in how something should be done, but afraid or incapable of thinking about why”.

Technological determinism has influenced the discourse of educational technology for many years. Advances in technologies have always been a steering force on the field, and many scholars in the field have been very enthusiastic to adapt new technologies. The history of the field includes several examples of this optimism. Motion pictures can be considered as a well-known example of this optimism. Edison strongly believed that motion pictures would revolutionize the education system, thus textbooks would be obsolete (Seattler, 1990). However, even today we still use textbooks, and it is apparent that his dream didn't come true. Edison's optimism or enthusiasm to replace traditional technologies with the new ones is not the only case. Similar predictions were made for instructional radio, instructional television, personal computers, or Internet, shortly for all new technologies without questioning their limitations, public good, and long-term effects. Therefore, it could be said that the history of the field of educational technology shows us many unfulfilled promises of technology optimists. Heinich (1991) showed an enthusiasm toward replacing teachers with educational technology based on his replicability argument. Many researches in this field supported arguments like Heinich for many years due to the pressure coming from government agencies or large technology corporations.

On the other hand, Gagne (1986) argued how instrumental rationality oppressed the research practices on instruction. He acknowledged that research on instruction is stimulated and defined by the media available for communicating learners and the future trends of research are determined by the changes that are likely to take place in the kinds of hardware delivery systems that are invented, developed, and put into use. Similarly, Noble (1996), a well-known scholar mostly writing on political history of educational technology, asserted that "technology fever" that is influential on policy makers and stake holders is not the result of the successful use of technology in schools, rather research results on technology use in schools remain ambiguous, and thoughtful experts call for cautious planning. He also claimed that computer based education is more about using the education market in the service of technological product development rather than it is about using technology in the service of education. For those markets education has been a sideshow, a proving ground, or a long-short term investment. Even today all those arguments remain valid. Setting from this point it would be reasonable to echo Apple's (1991) discussion on the conceptualization of technology. He criticized consideration of technology as an autonomous process in the society; therefore, technology was set apart and viewed as if it had a life of its own, independent of social intentions, power, and privilege.

Muffeetto (2001) notes that the field is a reified practice that recognizes no history, occupies no space within the social world, and no intentional interest or bias. Moreover she argues that educational technology is a field lacking an overt ideology, or not ready to admit to one. Rationalistic and mechanist ways of knowing and thinking have become normalized and part of our common sense. She claims that rationalistic and mechanistic consciousness have steered the work and the values of the field.

However, critical understanding requires thinking about ethical and political questions on *who decides what? and who benefits/loses?* (Gur, 2007). As educational technologists we need to start asking political questions about the causes of all those hegemonies mentioned above. Amin and Thrift (2005) proposed a four-point agenda for critical scholarship (p. 221):

1. A powerful sense of engagement with politics and political,
2. A consistent belief that there must be better ways of doing things than are currently found in the world,
3. A necessary orientation to a critique of power and exploitation that both blight people's current lives and stop better ways of doing things from coming into existence,
4. A constant and unremitting critical reflexivity toward our own practices: no one is allowed to claim that they have the one and only answer or the one and only privileged vantage point. Indeed, to make such a claim is to become a part of the problem.

In that sense understanding the conception of “technology” and its power on the field, and uncovering power dynamics that influence research practices in the field are crucial. After presenting literature on the theoretical framework of the study, the next section.

2.4 Research Studies on Educational Technology Research Trends

The developments in the field of Educational Technology has been influenced by technological innovations, historical events, and shifts theories of learning and instruction. Therefore, the field's direction has been led by influence coming from the outside of the field. Accordingly, those factors have had impact on which research issues to be signified while other issues were silenced. Similarly, research methods to be deployed in studies have been open to those changes as well. Setting from this point, Hew, Kale, and Kim (2007) argued that educational technology's research topics, and research methods change over the time as new technologies emerge and the way new technologies incorporated into learning settings change. Hence, examining educational technology research topics and methodologies in a systematic way help both researchers and practitioners understand what happened in the past, what lessons to be learned, and the field's current state; and provide a ground for discussion of trends in research and practice in the field. Furthermore, these systematic analyses offer road

maps through intense analysis of literature that figure out which research issues received the attention of scholars and which research issues need more attention. To fulfill that purpose content analysis of educational technology literature and research trend studies were conducted. In the following section trend analysis studies are presented.

Caffarella (1999) conducted a content analysis of 2689 dissertations published in US universities in the field of educational technology from 1977 through 1998 with a focus on major research, how the themes have changed, and how research method changed in this period. The findings of this comprehensive content analysis showed that educational technology doctoral students studied on various research topics given by the eclectic and interdisciplinary nature of the field. He reported three most popular research themes. The first one is research on computers including studies on appropriate uses, effectiveness of computers, individual differences, and software design. The second one is research on instructional development/design and systems, which remained constant during examined time period even though it was not the dominant research topic. The third one is simulations & games, and television & video. He also contended that at any given time point the newest hardware or software technologies grasped the attention of researchers. As for research methods, a reduction the number of comparison studies in which compare one medium against another one to evaluate if one medium is inherently better the other one was a startling finding of this study. The results of this study also indicated a reduction in the number of experimental research while an increase in the number of qualitative studies.

In 2004, Masood conducted a content analysis of educational technology literature in her dissertation study in an attempt to identify and describe topical themes and issues reflected in AECT publications. For that purpose, she analyzed 499 articles published in ETR&D and Tech Trends from 1993 through 2002. She recognized the power of new technologies to influence research practices; therefore, started her study with the assumption that computers and Internet would be prominent in the technology discussion. The result of this study showed that delivery systems, instructional development, and instructional methods were mostly studied research topics. She

reported that delivery systems have been noticeably influenced as the new technologies emerged.

Hew, Kale, and Kim (2007) conducted a content analysis of three prominent journals in the field from 2000 through 2004. They examined 340 empirical studies published in ETR&D, Educational Technology, and Instructional Science. The findings of the study indicated that media studies, instructional design approaches and psychology of learning were the most frequently studied topics. Descriptive methods were the most popular. As for data collection surveys and questionnaires were mostly preferred.

Trends studies have gained importance in Turkey in recent years. The researchers conducted studies focused on educational technology research trends from different perspectives. One of them is published by Ugur - Erdogmus (2009), and aimed to visualize general tendencies in Educational Technology field in research topics, research types, and methodologies. 215 Master theses and 32 PhD theses completed in CEIT departments in Turkey were analyzed by using content analysis method. The findings of this study indicated that most popular research topic was delivery system media format (distance education, classroom media, computer based instruction, or etc.), and quantitative methods and experimental methods were mostly preferred.

Akca – Ustundag (2009) examined 133 Master theses completed in Computer education and Instructional Technology graduate programs. She focused on research topics, research models, sampling, data collection tools, and committee members in theses jury. The most common research topic was computer-aided instruction. Quantitative research methods were the most frequently used in the examined literature. In addition, Kurt, Izmirli, and Karakoyun (2009) conducted a content analysis of theses and dissertations completed in Computer Education and Instructional Technology department. They figured out that the most frequently studied research topics were online learning, technology, teaching-learning approaches, and multimedia respectively.

Kılıç-Çakmak et. al. (2013) reviewed all articles published in 2011 6 SSCI journals, and 600 articles were analyzed in order to figure out research trends. The results of

this study showed that quantitative research methods were most frequently used method, and followed by mixed method research, and qualitative research designs respectively. Similar results obtained by, Goktas et al.(2012). The authors examined 460 Turkey addressed articles published in 32 different SSCI journals. They concluded that educational environments and technology were the focus of the most of the publications. Quantitative methods were used widely, questionnaires were the most common data collection instrument, and descriptive analyses were used frequently as a data analysis method. Recently, Revees and Oh (2017) analyzed articles published in ETR&D journal to understand how research methods evolved in 25-year time period. The findings of this study revealed that quantitative research methods comprised 41% of all research methods in published articles, and mixed method research has gained popularity.

All in all, trend analysis studies showed that educational technology research is dominated by quantitative research designs, and studies prioritizing technology never loses their popularity irrespective of the year they were conducted. However, these studies on research trends in the field chiefly asked descriptive questions, and lack an adequate theoretical framework. In other words, they did not extensively question the reasons behind the trends. Therefore, there is an urgent need to understand why those trends occur, and which issues have been left unnoticed. In addition, analyzing educational technology trends from a critical perspective will contribute to knowledgebase of educational technology in terms of how knowledge is produced in the field.

CHAPTER III

METHODOLOGY

3.1 Introduction

This chapter presents a detailed description of the research methodology employed in this study and procedures used. Research questions, design of the study, sampling, the data collection methods and instruments, data analysis procedures, validity and reliability issues, and ethical considerations are presented and described.

3.1.1 Research Questions

The overarching research question this study aims to answer is *what are educational technology research trends and developments in the context of graduate programs in the field of educational technology, and where is the academic field of educational technology heading in Turkey*. The research questions that guide this study are listed below:

- 1) What are the major trends of research in educational technology graduate programs in Turkey?
 - a) What are the major trends of research topics in the supervised Master's and doctoral theses?
 - b) What are the major trends of research methods in the supervised Master's and doctoral theses?

- 2) What are the possible factors that have influenced these research trends in academic field of educational technology from the perspective of faculty members?
- 3) What are the opinions of faculty members about these trends and predictions for the future?
 - a) What are the opinions of faculty members about the trends of research topics and methods in the supervised theses?
 - b) What do they predict for the future of the research trends in the field?

3.2 Research Design of the Study

In the current study, the researcher aims to uncover the factors that shape educational technology research trends in graduate programs of educational technology in Turkey. The first phase in this study is to conduct a content analysis of Master's and doctoral theses in terms of the research topics and research methods studied in order to capture a big picture of the field in the given context, and set the ground for the second phase of the study which attempts to question why those trends occur. In other words, the first phase of this study provides descriptive data of which research topics and research methods have been signified in the examined literature of educational technology while others have received less attention of researchers. In the second phase of the study the researcher aims to go one step further by employing in-depth interview technique in order to understand Computer Education and Instructional Technology (CEIT) faculty members' perspective on why those research trends appear through the lens of critical theory.

In social science research, researchers' philosophical worldview assumptions influence the way they produce knowledge. Creswell (2014) states that explanation of researcher's philosophical stance in a research project is valuable in terms of justifying the selection of the research design, since individual's beliefs inform their action. Four main philosophical world view is explained briefly, and researcher's epistemological stance is explained at the end of the chapter.

Four main philosophical worldviews are remarkably discussed in the literature: post positivism, constructivism, pragmatism, and transformative worldview (Creswell, 2014). Post positivism, whose assumptions hold true for quantitative research, embraces a deterministic philosophy that requires objectivity, and knowledge exists independent of the knower (Hannafin & Hill, 2002). Constructivist worldview adopts construction of reality by individuals and social groups, and knowledge is embodied in human experience and social constructions (Jonassen, Cernusca, and Ionas, 2007). Its assumptions comply with qualitative research. Pragmatism, is concerned with the consequences of actions, and recommends focusing on research problem and, using all approaches viable to solution of the problem instead of concentration on the methods (Creswell, 2014). Transformative worldview accepts that knowledge is socially constructed, not value neutral, and all knowledge reflects power and social relations in society (Mertens, 2005). Therefore, researchers operating under transformative paradigm accepts that reality is shaped by conditions; such as historical, social, political, and economical (Grogan & Simmons, 2012). Transformative paradigm's basic beliefs are summarized by Mertens (2010) as below:

- **Ontology:** Multiple realities are shaped by social, political, cultural, economic, ethnic, gender, disability, and other values. The ontological assumption of transformative paradigm leads to consideration of power that influence who will be more or less likely to be included in decisions about the accepted reality (p.13). In terms of research, power considerations raise questions about how decisions are made about “what is researchable”.
- **Epistemology:** There is an interactive link between researcher and participants; knowledge is socially and historically situated; power and privilege are explicitly addressed.
- **Methodology:** Quantitative and mixed methods can be used, and inclusion of qualitative methods is critical. Contextual and historical factors are

acknowledged (p.10). This paradigm suggests use of multiple approaches and methods that align with the assumptions.

As this study is informed by critical theory, it employs critical inquiry method which is social science operationalization of critical theory. Even though this study employs two different data gathering techniques sequentially – content analysis and in-depth interviewing, it does not fully comply with the ontological and epistemological assumptions of mixed method design. Mixed methods design is defined as a combination or integration of qualitative and quantitative research or data in one research project in line with pragmatic worldview (Creswell, 2014; Tashakkori & Teddlie, 2002). On the other hand, Mertens (2002) argues that mixed method research can also operationalize transformative paradigms which explicitly recognize absence, misrepresentation, and marginalization of certain voices. At this point, there is a certain need for justification of what makes this current study “critical”. Firstly, a brief explanation of critical theory is provided, and then critical elements of the current study is explained.

Critical theory usually refers to tradition developed by Frankfurt school (Kincheloe & McLaren, 2000). They argue that it is difficult to explain what exactly critical theory is because there are many critical theorists, the critical tradition is always changing and evolving, and critical theory attempts to avoid too much specificity (p. 281). From critical theory perspective, it is not enough to simply discover and record social behavior. For social research to be useful, the further stage of explaining that behavior in terms of socio-economic and cultural context is essential, that is to say, social research should go beyond “fact gathering”. According to Miller and Brewer (2003) critical theory’s assertion is that social research will always be animated by values, that it is impossible to conduct value-free social research. Critical theorists usually do this by beginning with an assumption about what is good (e.g. autonomy, democracy) and asking people in a social group, culture or organization to reflect on and question their current experience with regard to the values identified (e.g. To what extent are they an autonomous worker?)

Critical research is the social science operationalization of critical theory and a generic term used to explain any research that challenges conventional knowledge base and methodologies. In general, it is characterized as inquiry concerned with empowerment and emancipation, interrogation of power and culture, and a commitment of linking theory to practice (Gildersleeve, 2007). Carspecken (1996) defines a criticalist as a researcher or theorist who attempts to use her or his work as a form of social or cultural criticism and who accepts certain basic assumptions:

“That all thought is fundamentally mediated by power relations which are socially and historically constituted; that facts can never be isolated from the domains of values or removed from some form of ideological inscription; that the relationship between concept and object and signifier and signified is never stable or fixed and is often mediated by the social relations of capitalist production and consumption; that language is central to formation of subjectivity (conscious and unconscious awareness); that certain groups in any society are privileged over others and, although the reason for this privileging may vary widely, the oppression which characterizes contemporary societies is mostly forcefully reproduced” (p.6).

Myers and Klein (2011) propose a set of principles which are essential for a research study to be “critical”. The first principle is using core concepts from one or more critical social theorist. To illustrate, a critical research may be organized around Foucault’s or Habermas’ theories. The second principle is taking a value position which refers to advocating values in accordance with critical theory. The third principle is revealing and challenging prevailing beliefs and social practice which means critical researchers should identify important beliefs and social practices and challenge them with potentially conflicting arguments and evidences (p.25). The fourth principle is individual emancipation which puts importance of facilitating the

realization of human needs in research studies. The fifth principle is improvements in society which assumes that social improvements are possible, in other words things can be better than they are. The sixth and the last principle is improvements in social theory. According to authors, social theories are fallible and they can be improved so that critical researchers need to consider about alternative theoretical categories that may guide critical researchers.

The current study adheres to proposed principals of critical research (Myers & Klein, 2011), the table below shows the explanation:

Table 3.1 Principles of critical research.

1. Using core concepts from critical social theorists	This study uses Foucault’s conception of power.
2. Taking a value position	This study challenges “taken-for-granted” approaches to using technology in educational technology research.
3. Revealing and challenging prevailing beliefs and social practices	Dominance of media delivery studies and quantitative research tradition is questioned.
4. Individual emancipation	This study provides a ground for current state of educational technology research.
5. Improvements in society	The better ET research, revealing what is missing in ET research, and encourage ET community to think about more socially-responsible ET research agenda in Turkey.
6. Improvements in social theories	This study is one of the limited examples of critical theory informed ET research. In addition, this study is an example of a critical inquiry in the field of ET in Turkey.

As mentioned above this study follows a two phase sequential design. In the first phase of the study, a content analysis of Master's and doctoral theses in educational technology graduate programs is conducted. After getting data from the first phase, the second phase of the study is initiated. The following section explains the two-phase sequential design; content analysis and in-depth interviewing respectively.

3.2.1 Phase I: Content Analysis of Master's and Doctoral Theses

To elaborate research question 1, content analysis technique is used in the first phase of this study in order to provide descriptive data of which research topics and research methods have been signified in the examined literature of educational technology while others have received less attention of researchers. Besides, content analysis of theses and dissertations allows examination of data in chronological order so that the emergence of trends can be tracked as they occur over time.

Content analysis is a research technique for making replicable and valid inferences from data to their context (Krippendorff, 2004). Another way to see content analysis technique is that enables researchers to analyze human behavior in an indirect way (Frankel & Wallen, 2005). Content analysis is also defined as a research method for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, a representation of facts and a practical guide to action (Krippendorff 1980).

Berelson (1952) notes that content analysis can be about manifest content, on the other hand, Babbie (1992) argues that researcher want to move beyond manifest content and analyze what is called latent content. In analyzing latent content, the focus is shifted to meaning underlying the element on the surface of the message. Moreover, Donnerstein proposes that one type of latent content focuses on patterns in the content itself, and the other focuses on coders' interpretations of the meaning of the content. In the scope of this study, the researcher recorded focus of research topic and research methods that appeared in the documents during the coding stage and reserved

interpretations or inferences for the interpretative stage. It is legitimate to look for patterns and themes, and draw conclusion based on insights.

As content analysis is a scientific method, it reveals broad agreement on the requirements of objectivity, system, and generality. According to Pershing (2002) and Neundorf (2002) *objectivity* stipulates that each step in the research process must be carried out on the basis of explicitly formulated rules and procedures. One of the advantages of content analysis method is the messages and data obtained from documents, and researcher bias is highly minimized. *Systematic* means that the inclusion and exclusion of content or categories is done according to consistently applied rules. Being systematic eliminates researcher's tendency to choose data according to his/her assumptions or hypothesis. *Generality*, then, requires that the findings must have theoretical relevance.

3.2.1.1 Sampling and Data Collection

In this part of the study, target population is defined as all theses and dissertations completed in Computer Education and Instructional Technology graduate programs in Turkey until year 2016. In The Council of Higher Education's (YOK) database in which all dissertations and theses are submitted as a must requirement of getting a MSc or PhD degree in Turkey, Master's theses and dissertations completed in CEIT departments were categorized under three graduate degree program: 1- Computer Education and Instructional Technology, 2- Educational Technology, and 3- Computer and Instructional Technology Education.

To identify target population, the first step was to create a list of CEIT graduate programs in Turkey. The researcher obtained a list of public and private universities in Turkey from The Council of Higher Education's (CoHE) website. She browsed each university's website to see if they have CEIT undergraduate or graduate programs. 37 public universities and 8 private universities have CEIT undergraduate programs, which currently accept students. 22 public universities and 4 private universities (Bahcesehir University offers Master's degree program under Educational Technology title) have CEIT graduate programs. The researcher used the CoHE database's

“advance search option”. In Turkey, all the universities are tied to the Council of Higher Education in accordance with the new Higher Education Law (No.2547) which was put into effect in 1981(The Council of Higher Education, 2014). Based on this law, higher education is centralized in Turkey. Despite of this centrality, the names of the programs which offers degree in the field of educational technology vary in Turkey. Three different titles of educational technology graduate programs were identified in the CoHE website. They were “Computer Education and Instructional Technology”, “Educational Technology”, and “Computer and Instructional Technology Education”. Setting from here, the researcher searched for theses and dissertations according to these three titles, and to ensure that she searched for all theses and dissertations, she also searched according to supervisors’ name who have affiliation to educational technology graduate programs. Table 3.1 shows CEIT graduate programs in Turkey.

After organizing the list of CEIT graduate programs, the researcher also collected information about faculty members affiliated to CEIT graduate programs by examining each department’s website. She searched CoHE theses database to retrieve information of theses and dissertations supervised by the faculty members working in CEIT graduate programs. She used advance search option of the database, and retrieved information by entering university and faculty member’s name. The search result yielded 759 Master’s and doctoral theses in total until year 2016. As the researcher attempted to provide a rich description of research trends in the field of educational technology in Turkey, and the number of theses and dissertations is manageable, no sampling method is used in this study; therefore, the whole population is studied. Theses and dissertations supervised by any CEIT faculty member, but completed in a different graduate program were excluded intentionally.

After defining inclusion and exclusion criteria, the researcher downloaded full text of theses and dissertations if it is allowed in the CoHE database, otherwise she downloaded the abstracts. For restricted thesis or dissertations, the researcher sent email that explains her purpose of research to the authors in order them to share full text of dissertations or thesis. Data collection procedure was finalized in mid-2016, the

researcher continually checked whether there are any new data during her dissertation study in order to make sure she could include all available data to study.

Table 3.2 List of CEIT graduate programs in Turkey

University	Program Type	
	Master	PhD
Anadolu University	✓	✓
Ankara University	✓	✓
Ataturk University	✓	✓
Bahcesehir University	✓	X
Balikesir University	✓	X
Baskent University	✓	X
Bogazici University	✓	X
Canakkale University	✓	X
Cukurova University	✓	X
Dokuz Eylul University	✓	X
Ege University	✓	X
Fatih University	✓	X
Firat University	✓	X
Gazi University	✓	✓
Hacettepe University	✓	✓
Kahramanmaras Sutcu Imam University	✓	X
Karadeniz Teknik University	✓	X
Marmara University	✓	✓
Mevlana University	✓	X
Necmettin Erbakan Univesity	✓	✓
Middle East Technical University	✓	✓
Sakarya University	✓	✓
Suleyman Demirel University	✓	X
Uludag University	✓	X
Yildiz Teknik University	✓	X

3.2.1.2 Demographic Information

In the scope of current study 523 theses and 182 dissertations, in total 705, have been analyzed by means of content analysis method in order to answer the first research question of the study. The first research question is seen as below;

What are the major trends of research in educational technology graduate programs in Turkey?

- a) What are the major trends of research topics in the theses and dissertations?
- b) What are the major trends of research methods in the theses and dissertations?

Data obtained from CoHE showed that 22 universities have graduate programs of educational technology in Turkey; however, 20 of them have completed theses and accessible from CoHE database until year 2016. Among those 20 universities Ankara University, Anadolu University, Gazi University, Hacettepe University, and Middle East Technical University have doctoral programs while others have only Master programs. Table 4.1 shows number of theses and dissertations by university. As it is seen from the Table 4.1 METU has the highest number of doctoral thesis (31.3%), it is followed by Ankara University (24.2%), Anadolu University (20.9%), and Gazi University (12.1%) respectively. In terms of numbers of Master's theses Ankara University (14.7%) takes the first place, and followed by Hacettepe University (14.1%), METU (12.1%), Gazi University (11.1%), and Sakarya University (8.4%) respectively.

Table 3.3 Number of the theses and dissertations by university

University Name	MS thesis		PhD. dissertation	
	Frequency	Percent	Frequency	Percent
Anadolu Univ.	19	3.6	38	20.9
Ankara Univ.	77	14.7	44	24.2
Ataturk Univ.	9	1.7	2	1.1
Bahcesehir Univ.	9	1.7	-	-
Balikesir Univ.	4	0.8	-	-
Bogazici Univ.	3	0.6	-	-
Cukurova Univ.	28	5.4	-	-
Dokuz Eylul Univ.	12	2.3	-	-
Ege Univ.	25	4.8	-	-
Fatih Univ.	1	0.2	-	-
Firat Univ.	17	3.3	-	-
Gazi Univ.	58	11.1	22	12.1
Hacettepe Univ.	74	14.1	17	9.3
KSU	1	0.2	-	-
KTU	24	4.6	-	-
Marmara Univ.	41	7.8	1	0.5
N. Erbakan Univ.	8	1.5	1	0.5
METU	64	12.1	57	31.3
Sakarya Univ.	44	8.4	-	-
Suleyman Demirel Univ.	5	1	-	-
Total	523	100	182	100

Figure 3.1 shows the distribution of number of Master's theses by university, 5 universities which have highest number of theses and dissertations were shown in the figure, other universities were presented as "other".

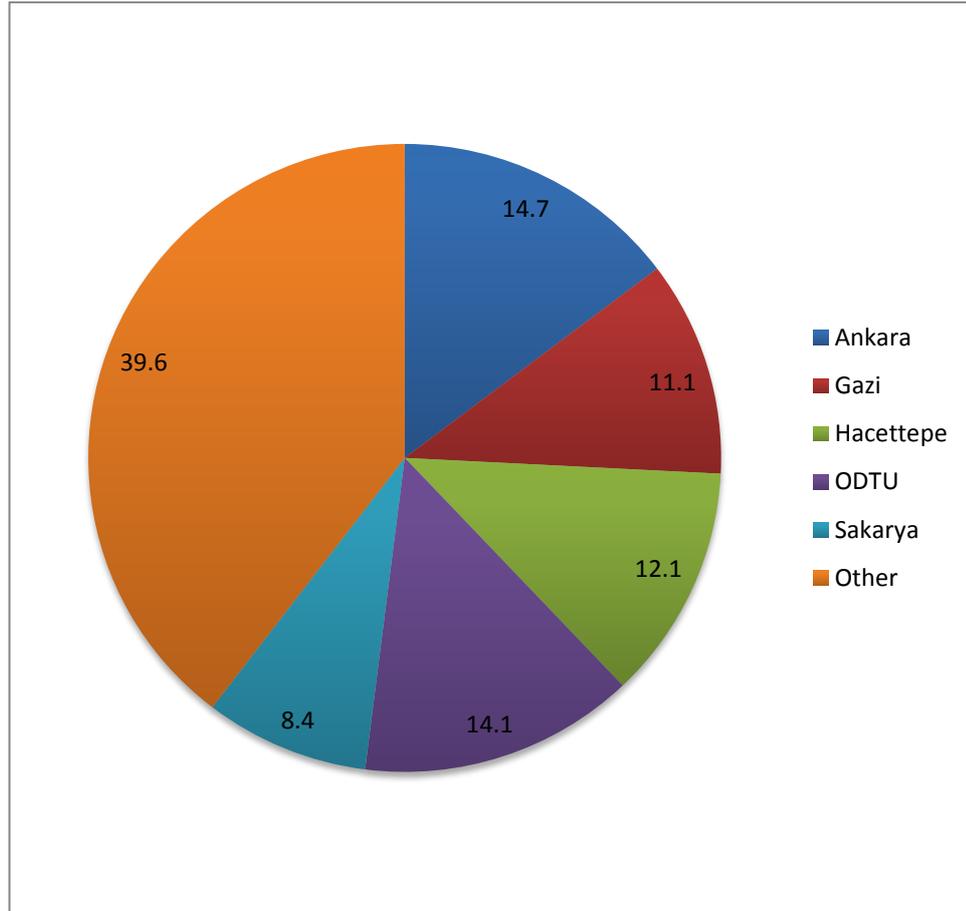


Figure 3.1 Distribution of Master's theses by universities.

Figure 3.2 shows the distribution of number of dissertations by university, 5 universities which have highest number of thesis were shown in the figure, other universities were presented as "other".

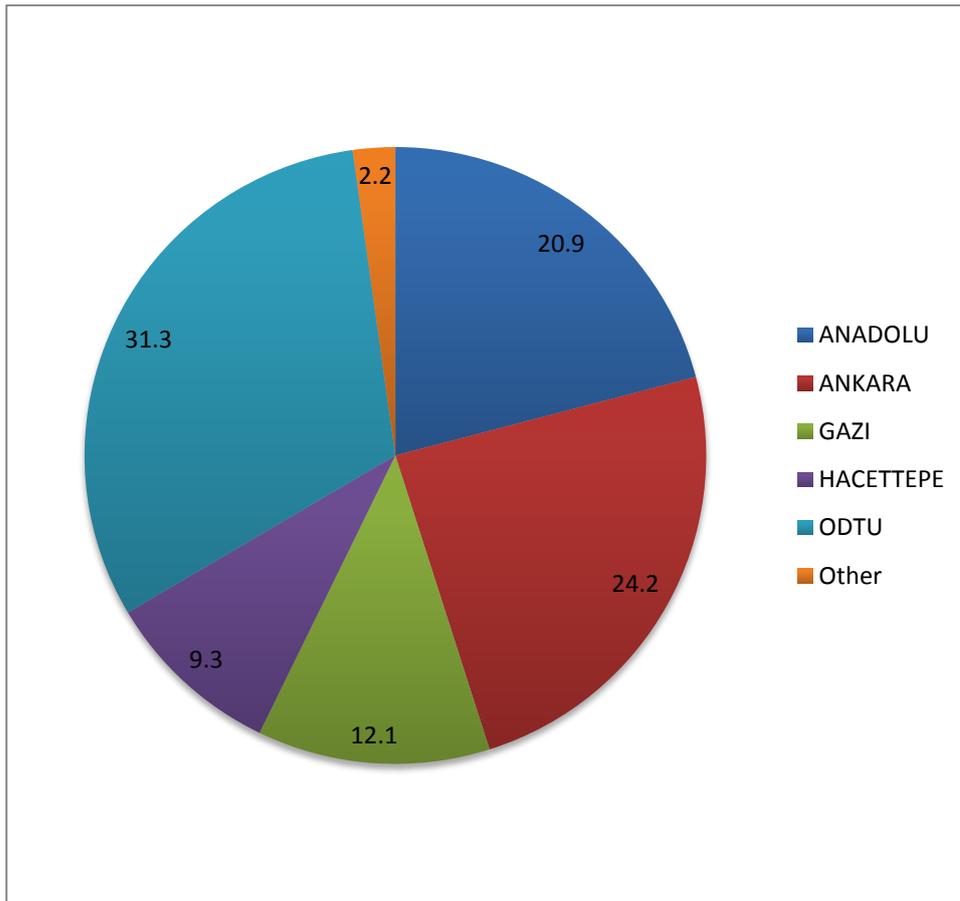


Figure 3.2 Distribution of PhD thesis by universities.

3.2.1.3 Data Analysis

Pershing (2002) proposes a 9-step guideline to systematic data analysis process for content analysis.

1. The first step is to stating the purpose of the research. As mentioned above, content analysis technique is employed to answer the first research question which is seen as below:

What are the major trends of research in educational technology graduate programs in Turkey?

- a) What are the major trends of research topics in the supervised theses and dissertations?

b) What are the major trends of research methods in the supervised theses and dissertations?

As mentioned earlier the researcher employed content analysis technique in this stage of the research. Therefore, the first three steps were completed in the earlier parts of this study. As it is explained in detail in the sampling part of this study, 759 theses and dissertations were analyzed in the scope of this research.

2. Specify the set of questions to be answered by the analysis: In this step a main research question and two sub questions guided the process. As mentioned in design of this study, the first stage is aimed to inform the second stage of the research. Therefore, the analysis will help answer the first research question and provide a ground for the second stage. As mentioned in the research questions and in the purpose statement, the documents are analyzed in order to figure out which research methods used and fluctuated over years, which research topics have been studied, and how they distribute by universities and years.

3. The third step is to decide on type of analysis. Pershing (2002) acknowledges that there are three types of document analysis: tracking, content analysis, and case study aggregation. The researcher employed content analysis technique since it provided a uniform, methodic, and objective way to determine the research topics and research methods in the theses and dissertations. In line with that purpose the researcher employed following data analysis techniques:

a) Inductive analysis which refers to identification of patterns, themes, and categories (Patton, 1990). Inductive analysis is iterative in nature that means continuously scanning data for categories and themes, and new categories or themes may emerge during data analysis phase. In that sense, the researcher made revisions in the initial themes and categories as the one ones emerged.

b) Constant comparative analysis (Glaser & Strauss, 1981) which is defined as combined inductive category coding with a simultaneous comparison of the social phenomenon studied and requires continuous refinement in terms of categories. The researcher employed this technique in order to define categories and themes for the content analysis.

c) Descriptive statistics and cross tabulation is used to represent the distribution of data according to year, university name, research method, and research topic clusters.

4. Prepare for the analysis: In this step, the researcher created a MS Excel file for data entry purpose. She entered data for previously determined areas (CoHE ID, Year, University Name, Research Topic, Theoretical Framework, and Research Method).

5. Code documents: In this step researcher dealt with coding based on above mentioned procedures. The process of coding the documents, sorting and sifting, making discoveries, and thinking about things are iterative and done repeatedly until all pertinent and relevant concepts are considered. As a result, themes emerged and patterns are discovered. As mentioned in the pilot of content analysis part, the codebook was developed based on initial analysis.

The following steps are sorting and sifting data, making discoveries, thinking about things and lastly reporting findings.

3.2.1.4 Codebook Development and Validation

In a content analysis study, categorization and coding are very critical. Category is defined as “a set of criteria that are integrated around a theme or a value” (Neuendorf, 2002). Categories that are used in content analysis should be very clear and enable other research studies on the same data to yield the same results. Sarantakos (2005) suggested following futures that categorization in content analysis should have:

1. To be clearly defined and unambiguous

2. To relate exclusively to the research topic
3. To focus on a specific part of the research topic

In this study, the researcher did not use any existing categorization developed by other researchers, rather she attempted to develop a new categorization that will help to achieve purposes of this study. There have been similar studies in the literature of educational technology field (Masood, 2004; Cafferalla, 1999; Hew, Kale, and Kim, 2006; Ugur-Erdogmus, 2009; and Akca-Ustundag, 2011), and in the scope of those studies some categories were developed. However, the researcher does not prefer to adopt any of them since existing categorizations have some deficiencies to fulfill the purpose of this study. One of the most recent and comprehensive instructional technology research trends categorization developed by Massod (2004) was evaluated whether it could be appropriate to use in this study. Her study aimed to find out which study topics were used and how they fluctuated over years in the articles published in ETR&D in a ten-year period.

The researcher did not prefer to adopt her study for two reasons: Nine years passed since she completed her study; therefore, the researcher needed a more up-to-date version in a sense that educational technology research topics change over time with the influence of emerging technologies as mentioned earlier; and secondly, this study aims to figure out not only which topics have been studied and which research methods have been used, but reveal which research topics and methods have been ignored in the literature, or got less attention. Moreover, critical theory which puts value on social, cultural, and ethical issues, is used as a theoretical framework in the current study. In codebook development procedure, the researcher developed the first version of codebook based on literature and initial analysis of dissertations and theses. After getting feedback from four experts in the field of educational technology, the researcher made revisions and the final codebook is developed. According to this new version of codebook, all coding is done.

The codebook used in this study is presented below.

3.2.1.4.1 Codebook

Research Topics	Explanation
1. The Field	The field of educational / instructional technology in general. The field’s research scope, history and its development, ethics in the field, instructional design and development, theories and research methods adhered to the field. Standards and competencies for professionals, instructional designers. Educational technology professionals’ education / training.
<ul style="list-style-type: none"> a. Definition / Scope / Foundations b. History / Trends /Future c. Ethical Issues d. Standards / Competencies / Professionals e. IDD Theory / Models f. Research / Theory 	
2. Emerging Technologies, Acceptance of Emerging Technologies	
<ul style="list-style-type: none"> a. New technologies (Social media, VLE, Augmented / Virtual Reality, Games / Simulations, Robotics, Learning Objects) b. Technology Acceptance Models, Enablers / Barriers c. Teacher / Instructor, Administrator Factors 	New technologies, acceptance of emerging technologies and technology acceptance models and theories (e.g.:TAM, UTAUT “Unified Theory of Acceptance and Use of Technology”), actors in technology acceptance (e.g.: teachers, instructors, administrators) and their perception, motivation, satisfaction in technology acceptance.

3. Pedagogy, Theory of Learning / Instruction, Teaching	Learning and instructional theories (e.g.: behaviorism, cognitivism, constructivism, elaboration theory, situated learning, cognitive load theory), teaching /
<ul style="list-style-type: none"> a. Teaching / Instructional Methods b. Learning Theories c. Motivation, Satisfaction, Feedback d. Learning Outcomes / Learning Objectives 	<ul style="list-style-type: none"> instructional methods (e.g.: project based learning, cooperative learning). Theories and models regarding motivation (e.g.: ARCS), satisfaction, and feedback.
4. Teacher / Instructor	
<ul style="list-style-type: none"> a. Teacher Education / Training / Professional Development b. Competency (Technology Competency) c. Motivation / Attitude / Perception 	<ul style="list-style-type: none"> Pre-service and in-service teacher training, professional development for teachers, teachers' technology competency etc. Teachers' motivation, perception, attitude towards technology, any teaching methods.
5. Learning Environment	

<ul style="list-style-type: none"> a. Design / Development of Learning Environments / Instructional Materials (Multimedia Design, etc.) b. Delivery Method of Instruction / Training c. Effectiveness of Learning Environments d. Communication (CMC, Interaction in technology based environments, Discussions) 	<p>Design, development, and implementation of learning environments, training / instructional materials, process of analyzing needs, the way content delivered, evaluating learning environments in terms of their effectiveness, communication in technology based environments (e.g.: Interactions, types of communications).</p>
<p>6. Social / Cultural / Political Issues</p>	<p>Education and ICT policies that influence Educational Technology practices. Open educational resources (OER), democratizing education and technology, digital divide. Cyberbullying, risks in the Internet environment, Internet addiction, child abuse.</p>
<ul style="list-style-type: none"> a. Education Policy b. ICT policy c. Democracy / Equality d. Economic Issues e. Appropriate (?) ICT use (ICT addiction, safety, children's ICT use, ethics) 	
<p>7. Learner</p>	

<ul style="list-style-type: none"> a. Achievement / Motivation / Attitude / Perception b. Learning / Cognitive Styles c. Individual Differences (age, skills, SES, gender etc.) 	<p>Learner achievement, motivation, skills, perception, attitude, aptitude, study type.</p> <p>Learner's cognitive or learning styles.</p> <p>Individual differences.</p>
8. Assessment and Evaluation	
<ul style="list-style-type: none"> a. Program Evaluation b. Technology Based Assessment c. Usability Studies / Eye Tracking 	<p>Program evaluation, program evaluation models. Assessment in technology based environments. Usability studies, usability techniques and models, eye movement, eye tracking.</p>
9. (Human) Performance Technology	
<ul style="list-style-type: none"> a. Informal Learning b. Knowledge Management c. Models / Theories 	<p>Human performance technology, electronic support systems (EPSS), on job aids.</p> <p>Models and theories of HPT. Informal learning. Knowledge management.</p>
10. Change Management / Implications	
<ul style="list-style-type: none"> a. Curriculum Reform b. Nationwide ICT Projects c. Systemic Change d. Change Management Theories / Models 	<p>Change management models and theories.</p> <p>Nationwide projects for ICT integration (e.g.: Fatih Project), EU projects. E-government, e-citizenship. Systemic change.</p>

11. Other Disciplines	Other disciplines
-----------------------	-------------------

Research Methods

1. Quantitative methods
 - 1.1. Experimental research (True experimental designs and quasi-experimental designs)
 - 1.2. Survey research
 - 1.3. Correlational research
 - 1.4. Causal comparative research
 - 1.5. Descriptive research
 - 1.6. Meta-analysis

2. Qualitative methods
 - 2.1. Case study
 - 2.2. Action research
 - 2.3. Phenomenological research
 - 2.4. Critical research
 - 2.5. Ethnography
 - 2.6. Qualitative research (whose genre is not specified by the authors of theses and dissertations).

3. Mixed method – multi-method
4. Design based research / Developmental research
5. Formative research
6. Literature review
7. Other

“Other” category is used for the methods which do not fit into any category in the codebook and for the theses or dissertations whose authors did not write which

research methods were employed. It is important to note that the researcher did not make any judgments or manipulations when coding research methods of examined theses and dissertations. She took them as it was stated in theses and dissertations.

As for content analysis technique, the reliability refers to its:

1. *stability*, the tendency for coders to consistently re-code the same data in the same way over a period of time;
2. *reproducibility*, or the tendency for a group of coders to classify categories membership in the same way;
3. *accuracy*, or the extent to which the classification of a text corresponds to a standard or norm statistically.

To ensure reliability in content analysis part of this study, the researcher got help from intercoders. Intercoders recruited from individuals who are doctoral students of educational technology. The intercoders independently coded %10 of data, and then the researcher continued to coding data.

The validity of a content analysis study refers to the correspondence of the categories to the conclusions, and the generalizability of results to a theory. To ensure validity, the researcher followed the flowchart of a typical content analysis to keep track of her own progress and systematically check data collection, coding, and reporting processes.

3.2.1.5 Pilot of the Content Analysis

Right after data collection procedures ended, the researcher started data entry and piloting the content analysis phase. As the first research question of this study aims to figure out major trends of research in educational technology graduate programs in Turkey regarding research topics and research methods, the researcher defined the following data entry areas:

ID: This area refers to ID of thesis or dissertation given by the CoHE.

Year: The year thesis or dissertation is completed. This information is used to present how the trends change over the years.

Name of the University: The institution where the thesis or dissertation is completed. This information is used to figure out how research topics and trends change regarding the universities. This information is also helpful to figure out the agency role of institutions and supervisors.

Title: The title of the thesis or dissertation. This information is used as a supplementary information in defining research topic.

Degree Type: MSc or PhD

Keywords: Up to six keywords were entered to the database.

Research Topic Cluster: Based on the review of abstract, introduction, and literature review sections, the researcher attempted to reveal focus of inquiry of the theses or dissertation. In this step, the researcher endeavored to present main focus of the study, and the secondary research topics.

Theoretical Framework: If the author of the thesis or dissertation explicitly mentioned that the study informed by a theoretical framework, the researcher recorded this information. Otherwise, it is stated as “Not Specified”.

Research Method: In this area the researcher noted genre of research method defined by the author of thesis or dissertation. In the case more than one research method employed, the researcher decided to note the main research method under this category. To exemplify; if a study employs experimental methods and conducts interview as a follow up, and the author of the theses or dissertation did not clearly mention it is an experimental study; the researcher evaluates that study as experimental.

3.2.2 Phase II - In-Depth Interview

In-depth interviewing is described as purposeful conversations with participants, and make it possible to uncover the participant's perspective on the phenomenon of the interest and in this technique allows the researcher to frame general topics to help unfold the participant's view as well as providing the ground for participant to reflect her/his own perspective (Marshall & Rossman, 1999). As in-depth interviewing allows flexibility and values not only researcher's view but also participant's view, it helps researchers to include various issues that were not anticipated before interview process (Bogdan & Biklen, 1998). Accordingly, in the second phase of this study, in-depth interviewing technique is employed to understand the factors that shape educational technology research trends in graduate programs of CEIT from the perspective of CEIT faculty members. In this study, the researcher aims to go beyond frequencies of mostly studied issues in the selected literature, rather she attempts to uncover the factors affecting the trends of the field in graduate programs of CEIT.

Based on epistemological beliefs on the way knowledge is produced and conveyed, each research method describes their own way to investigate the phenomenon under study in social sciences. The natural structure of the present study, and researcher's critical stance require an in depth investigation of the phenomenon of interest in this study. Uncovering why the field of educational technology is heading to its current direction, or why it's dealing with the current issues are the main concerns of this study. Moreover, critical research approaches emphasize dialogical methods to allow researchers and participants' co-creation of knowledge and reflection on the phenomenon under study, therefore; emphasize interpretive understanding of the phenomenon. Comstock (1980) argued that a critical method which treats society as a human construction and people as the active subjects of that construction would be based on a dialogue with its subjects rather than the observation or experimental manipulation of people (p. 370).

Accordingly, in depth interview technique is used to uncover the possible factors that influence these research trends in academic field of educational technology from the

perspective of faculty members, and understand what faculty members think about these current trends and their predictions for the future of the field in Turkey.

3.2.2.1 Instrumentation

The findings of content analysis study in the first phase informed the instrumentation for in-depth interviewing. The interview schedule was developed to collect information about the informants' motivation to select a research project/topic, their opinions about the field's trends, what they see missing in the field, and closes with what they predict for the near future of the field in Turkey. The instrument consisted of seven main questions and their sub-questions. The interview protocol starts with "warming" questions in order to provide rapport and continues with questions. Spradley (1979) contends that building rapport between interviewer and interviewee is an important issue given that at the beginning of interviews there is uncertainty about flow of the conversation, and he suggests starting interview with warming questions in order to minimize uncertainty. Therefore, the researcher started interview with background questions. After warming up and feeling comfortable, the researcher continued with following questions. The first interview question was a background question that asked the informant's previous research studies, and their motivation to study on them. The second research question which was how the informants respond to new technologies in their research practices was informed by the literature that claims Educational Technology researchers have been very inclined to embrace new technologies in their studies chiefly because of their popularity. The third interview question was also asked to understand how the informants decide on what to study. The fourth, the fifth, and the sixth interview questions were written in order to understand underlying reasons behind the trends in Educational Technology theses and dissertations. These questions were developed based on the findings of the content analysis phase of the current study. The last question was asked to understand what the informants of this study predict for the future of the field. The instrument used for in-depth interviewing is presented in Appendix A (in Turkish) and Appendix B (in English).

3.2.2.2 Pilot of the Interview Protocol

Piloting helps researcher to test the instrument that is used in data collection. It shows if the instrument serves its purposes, it's fully understood by the participants, and gives an opportunity to revise the instrument by means of feedbacks. In addition, according to Spradley (1979) practice reduces the anxiety which all researchers may experience when they begin interviewing a new informant. Therefore, the pilot study also helped the researcher to feel confident before she began the actual study. Prior to conducting actual interviews, the interview protocol was pilot tested with two faculty members working at educational technology departments offering educational technology graduate programs. Those faculty members were not included to actual study.

The feedback was gathered from two faculty members and suggested revisions were made. They both suggested that initial interview questions were too long to answer in one session of interview. Initial version of the interview schedule also included questions about how faculty members define the field, their understanding of technology, the influence of institutions where the informants work on their research practices, and how the interdisciplinary nature of the field shaped their research practices. The pilot of the interview showed that asking these questions took very long time. Additionally, these questions were not helpful to answer the research questions. Therefore, the researcher revised the interview schedule, and one more time pilot tested it with another faculty member. This informant was not included to actual study either.

3.2.2.3 Selection of Informants

Deciding whom to interview is the first essential step of interview. According to Spradley (1979) a person with a history of the situation, who is currently in the position, and who will allow adequate time to interview them can be selected as a key informant. Purposive sampling method is used to identify informants of this study. Purposive sampling enables the researcher to select information-rich cases for in-depth data collection to represent the population (Fraenkel & Wallen, 2004). The researcher sees the participants of this study as contributors /informants rather than "subjects";

since, the current study is an attempt to understand how knowledge has been created in the field of educational technology from faculty members' perspective.

The informant selection process started with making a list of all faculty members who have supervised Master's or doctoral theses in CEIT graduate programs based on data collected in the first phase of the study. However, the faculty members who do not currently work at CEIT graduate programs were excluded from the study irrespective of the number of theses they supervised. Data were collected from eleven faculty members working at universities that have educational technology graduate programs.

The researcher sent an invitation letter via email to each faculty member in the list to contribute to the current study. This invitation letter explains the purpose of the study, the expected interview duration, and includes ethic committee approval from METU. In addition, a copy of interview questions was attached to the email.

Upon the invitation, eleven faculty members volunteered to participate in this study. Among the participants, 6 of them were Professor, 4 of them were Associate Professor, and 1 of them was Assistant Professor. Seven of them were male and 4 of them were female. Eight of the informants received their PhD degrees from Educational Technology or related majors, 2 of them received their degree from Curriculum and Instruction major, and 1 of them received his/her degree from a major which is not related to Educational Technology field. Six of the participants got their PhD degrees from universities in USA while the others completed their PhD in universities in Turkey.

3.2.2.4 Data Collection

The researcher firstly asked the informants read the informed consent form, and sign it if they agreed to join the study. (Appendix A – informed consent form and interview schedule). When the informants signed the informed consent form, she asked permission to audio-record the interview one more time. Before starting interview, the researcher explained the focus of the study. The interview started with background questions on the faculty members' research experiences and their research lines in order to minimize the feelings of uncertainty about the interview process and build

rapport between the informant and the researcher. At the beginning of the interviews, it was also made clear that the informants' cooperation and co-construction of knowledge is important. Each interview took place in the faculty members' offices and lasted between 35 minutes to 90 minutes. The researcher prepared the interview schedule based on the findings of the first phase. Questions were asked about major findings of the content analysis. To illustrate, the most dominant research methods and research topics were presented to interviewees and asked to comment about their dominance.

3.2.2.5 Data Analysis

The first step in data analysis is preparing data for analysis. After each interview, the researcher transcribed the audio-recorded interviews by using MS Word program to prepare them for analysis. The researcher firstly read each interview data line by line to get, color coded, and took her initial notes. During this step, the researcher also used her field notes that she took during and after interviews. However, she did not provide background and descriptive information about the informants in order to ensure confidentiality of their identities. As the informants of this study are faculty members of CEIT graduate programs, presenting that kind of information would disclose their identities.

Corbin and Strauss (2015) suggest that qualitative data analysis should start with open coding which refers to identifying, naming, categorizing phenomena in the text. At this step, they advise reading and reviewing data line by line. By doing so, a list of initial codes were generated, and continuously revised and relabeled by the researcher. The researcher wrote self-reflective memos to keep track of her decisions and speculations about codes, themes and subthemes. As qualitative data analysis is iterative and ongoing process, the memos facilitated and informed data analysis. The second step in data analysis is axial coding which refers to relating codes with each other, in other words making linkages between categories and subcategories (Corbin & Strauss, 2015). The researcher reviewed codes according to themes and subthemes, make relation between categories and subcategories iteratively. Once the researcher decided that little or no codes emerged in the analysis; saturation has been achieved. Before

finalizing the analysis phase, an expert in the field reviewed categories and subcategories for cross-checking. In the presentation of results, the researcher used verbatim quotations from the interviews to increase the credibility of the research.

3.2.2.6 Trustworthiness

Validity and reliability are tools of an essentially positivist epistemology. In positivist tradition, validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. Reliability refers to the extent to which results are consistent over time and accurate representation of the total population under study (Golafshani, 2003, p. 598). Although the terms validity and reliability are considered as the terms inherent to positivist tradition, any qualitative researcher should be concerned about them while designing a research, analyzing results and judging the quality of the study.

In qualitative approach the terms validity and reliability are not used explicitly, rather it has its own terminology. “Trustworthiness” is used in replacement of validity concept in positivist tradition, which means “whether the findings are accurate from the standpoint of the researcher, the participant, or the readers of an account” (Creswell, 2003). Criteria for trustworthiness consist of credibility, transferability, and confirmability, and dependability (Lincoln & Guba, 1985).

In this research to ensure trustworthiness following strategies are employed:

1. **Triangulation:** Collecting data from different sources (time, person) to corroborate and illuminate the research. In this study, the researcher collected data from participants with different backgrounds, different universities, and perspectives to establish credibility. Moreover, the content analysis of professional literature is another data source.
2. **Member checking:** Help preventing misunderstandings and tempering subjective assumptions. In this study, after each contact the researcher transcribed the interview as soon as possible and sent the text to the contact in order to make sure text reflects his/her meanings.

3. **Reflexivity:** Provides information about the researcher's insights, reasons about methodological decisions. The researcher used "Contact Summary Form" adopted from Miles and Huberman (1994) in order to keep track of her experience with the informants. This form helps summarize the main points of interview. The form is shown in Appendix B.

3.2.2.7 Ethical Issues of In-depth Interview

It is required to get ethical committee approval from the institution that researchers are affiliated before starting study with human subjects. In that sense, the researcher applied to METU Applied Ethics Research Center to get approval for her instrument. This application includes interview schedule, informed consent form, and who would be the possible participants of the study. The official approval is presented in Appendix B. It is stated in the application form presented to ethical committee that participants' identities would be kept confidential. Therefore, the researcher used pseudonyms for faculty members (Professor -1, Professor -2, etc.) when present findings of this part.

In each interview, the researcher had a hard copy of informed consent form and asked informants to read and, if they agree, to sign it. Moreover, the researcher also explained that informants' identities would be strictly kept confidential, they could stop interview whenever they felt uncomfortable, and the gathered information would be used just for scientific purposes.

3.3 Limitations of the Study

While this research contributes to the body of knowledge on educational technology research trends and how the knowledge is created in the field, it has theoretical and methodological limitations. First and foremost, theoretical limitations of the study can be discussed in terms of theoretical and philosophical tenets of critical theory that is used as theoretical framework in this study. Critical theory lacks clear definitions and methodological guidelines for research even though it has been long discussed in the literature. To illustrate, critical research, which is social science operationalization of critical theory, still needs a common definition and methodological guidelines.

However, it is stated that critical researchers can use different research methods that serve their purposes.

Secondly, this study purposefully focuses on research practices in graduate programs of educational technology. However; nation-wide education and ICT policies are critical factors that could affect research practices in the field of educational technology. Lack of human resources and time, this study focused on graduate programs of educational technology, and included Master's and doctoral theses to track the trends in the field. Excluding other professional literature of the field - such as publications in academic journals – is one other limitation of this study.

Thirdly, to ensure reliability in content analysis studies it is suggested by Neuendorf (2002) that intercoder reliability is paramount. In this study, the researcher studied with two intercoders who are doctoral students in educational technology. Ideally, it is expected whole data set to be coded by different coders, however, as they had time limitations, they independently coded 10% of data. This is a limitation of this study.

While the suggestions could be transferrable to other contexts, researchers should be cautious in applying the findings into other contexts that have different cultural, political, and organizational dynamics.

Aforementioned, the researcher's statement of his/her philosophical stance in a research project is of great importance to audience of the study. Mertens (2010) discusses that researchers need to acknowledge their philosophical assumptions that guide their research practices. In this doctoral study, the researcher's understanding of reality, and the way knowledge produced is parallel with transformative worldview. That is to say, she sees research as a political activity in a sense that knowledge can be produced in a context, which is socially, culturally, and politically bounded. Therefore, this study adopts critical theory as a theoretical lens.

The researcher's motivation to start this study stemmed from her belief that things could always be better, and she extends this belief to the field of educational technology. To explain, she believes that it is important to question why researchers study on what they have been studying.

In the context of this study, researcher's role is to co-create knowledge with participants by interviewing them. The researcher conducted interview with the informants of the study, transcribed in-depth interview data, analyzed and interpreted data. The researcher also gathered data for content analysis, prepared data for coding, analyzed data and interpreted the results.

3.4 Summary of the Chapter

This chapter's summary is presented in Table 3.4.

Table 3.4 Summary of the method chapter

Research Questions	Data Source	Data Analysis
1) What are the major trends of research in educational technology graduate programs in Turkey? a) What are the major trends of research topics in the supervised Master's and doctoral theses? b) What are the major trends of research methods in the supervised Master's and doctoral theses?	Theses and dissertations completed in CEIT graduate programs. 705 theses and dissertations were analyzed.	Content analysis Inductive analysis and constant comparative analysis. Descriptive statistics and cross-tabulation.
2) What are the possible factors that have influenced these research trends in academic field of educational technology from the perspective of faculty members?	11 faculty members working at CEIT graduate programs.	Qualitative data analysis - Open and axial coding

<p>3) What are the opinions of faculty members about these trends and predictions for the future?</p> <p>a) What are the opinions of faculty members about the trends of research topics and methods in the supervised theses?</p> <p>b) What do they predict for the future of the research trends in the field</p>	<p>11 faculty members working at CEIT graduate programs.</p>	<p>Qualitative data analysis - Open and axial coding</p>
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CHAPTER IV

FINDINGS

4.1 Introduction

In this chapter findings of the study are presented. The organization of the chapter is specified according to sequential structure of the study, therefore, firstly findings of content analysis which serves to answer the first research question of the study are presented. In this phase of the study, 705 theses and dissertations were analyzed from 1996 through 2015. The researcher presented the findings in 5 – year time periods. Time periods defined by the researcher are as follow: 1) 1996-2000 time period, 2) 2001-2005 time period, 3) 2006-2010 time period, and 4) 2011-2015 time period. The results indicated that there has been considerable increase in the number of theses in the last three time periods; whereas in the first time period, from 1996 to 2000, 16 theses were published which only constitutes 2.27% of total number of theses completed. As the percentage of theses in the first time period is negligible, trends are evaluated by considering the last three time periods. However, data is provided for the first time period. Secondly, findings of second phase of the study - the in-depth interview are presented.

4.2 Findings of Content Analysis

The findings of content analysis phase are presented according to following research questions.

What are the major trends of research in educational technology graduate programs in Turkey?

- a) What are the major trends of research topics in the theses and dissertations?
- b) What are the major trends of research methods in the theses and dissertations?

4.2.1 Research Topics Trends in Theses and Dissertations

Theses and dissertations were analyzed in terms of research topic studied in order to find out which research topics have been emphasized and which of them have received less attention in the examined literature. For that purpose, data were coded in two different ways and results are presented accordingly. The first coding and analysis aimed to provide a general description of research topic trends in the field; thus, the researcher selected one main research topic for each thesis. The second coding and analysis aimed to provide more detailed information about research topics studied in these and dissertations. Hence, data were coded and analyzed based on sub-categories that take place under main research topic category. In this analysis, up to two sub-categories were selected for each thesis and dissertation. Therefore, number of sub-categories are higher than total number of theses and dissertations. To make it clear, a sample data coding is presented below:

Key words: Eye movements, cognitive processing, concept map, eye tracking

Excerpts from dissertation:

“This study aimed to investigate the similarities and differences among novices and experts’ concept map development process regarding their cognitive processes.” ... “The purpose of this study is to understand the concept map development process from the perspectives of experts and novices. This study is not interested in just scoring the concepts and relations, instead it was focused on exploring the concept map development process since this process includes much more than acquiring an end-product. During the concept map development process, visual representation of information is the main focus; even though the individuals may use inappropriate concepts or links that may result with correct relations among the concepts in their map.” ... “This study aimed to explore pre-service teachers’ who are considered as novices and domain experts’ in the CM development process by using the eye-tracking

device.” ... “This study may also offer valuable information on the cognitive process of pre-service teachers during CM development and may help them to regulate the process of teaching while considering the differences between learners in terms of CM development patterns.” ... “The idea of concept mapping originated from Ausubel’s studies on meaningful learning theory emphasizing the importance of prior knowledge and the effect of advance organizer on learning and retention (Ausubel, 1960, 1962; Ausubel & Fitzgerald, 1962).”

Data coding according to the main research topic: “Pedagogy, Theory of Learning / Instruction / teaching”

Data coding according to sub-categories: 1) Learning theories 2) Usability studies/Eye Tracking

As it was given in the codebook, main research topics include “assessment and evaluation”, “change management”, “emerging technologies, acceptance of emerging technologies”, “learner”, “learning environment”, “pedagogy, theory of learning/instruction”, “social/cultural/political issues”, “teacher/instructor”, “the field”, and “other” categories.

The analysis based on main research topic revealed that learning environment (n=228, 32.34%), emerging technologies and acceptance of emerging technologies (n=117, 16.59%), pedagogy, theory of learning/instruction (n=109, 15.46%), teacher/instructor (n=88, 12.48%), and assessment & evaluation (n=61, 8.65%) categories have been most popular research topics in the examined literature respectively. These five categories totally constitute majority of the research topics in theses (n=542, 76.88%).

4.2.2 Learning Environment

“Learning environment” category identified as the most popular research topic in the scope of this study. A fluctuating trend has been observed in terms of frequency whereas it has shown a decreasing trend when it is evaluated in terms of percentage. The detailed results are given below:

Table 4.1 Frequency and percentage of learning environment category in the given time periods.

Time Period	Total number of theses/dissertations	Related to learning environment category	Percentage
1996-2000	16	10	62.50 %
2001-2005	146	61	41.78 %
2006-2010	280	94	33.57 %
2011-2015	263	63	23.95 %

4.2.3 Emerging technologies, acceptance of emerging technologies

“Emerging technologies, acceptance of emerging technologies” category, which is the second most popular one, has shown a steadily increasing trend in terms of both frequency and percentage. The detailed results are presented below:

Table 4.2 Frequency and percentage of emerging technologies, acceptance of emerging technologies category in the given time periods.

Time Period	Total number of theses/dissertations	Related to emerging technologies, acceptance of emerging technologies category	Percentage
1996-2000	16	0	0.00 %
2001-2005	146	10	6.85 %
2006-2010	280	45	16.07 %
2011-2015	263	62	23.57 %

4.2.4 Pedagogy, theory of learning / instruction

“Pedagogy, theory of learning/instruction” category has shown a fluctuating trend in terms of frequency. It has remained almost the same in 2001-2005 and 2006-2010 time

periods whereas it has shown a decrease in the last time period when it is evaluated in terms of percentage. The detailed results are provided below:

Table 4.3 Frequency and percentage of pedagogy, theory of learning/instruction category in the given time periods.

Time Period	Total number of theses/dissertations	Related to pedagogy, theory of learning/instruction category	Percentage
1996-2000	16	1	6.25 %
2001-2005	146	24	16.44 %
2006-2010	280	45	16.07 %
2011-2015	263	39	14.83 %

4.2.5 Teacher / instructor

It is observed that “Teacher/instructor” category has shown a steadily increasing trend in terms of frequency. When evaluated in terms of percentage, it has almost remained stable in 2001-2005 and 2006-2010 time periods, and it has shown an increasing trend in the last time period. The detailed results are shown below:

Table 4.4 Frequency and percentage of teacher/instructor category in the given time periods.

Time Period	Total number of theses/dissertations	Related to teacher/instructor category	Percentage
1996-2000	16	1	6.25 %
2001-2005	146	18	12.33 %
2006-2010	280	32	11.43 %
2011-2015	263	37	14.07 %

4.2.6 Assessment and evaluation

“Assessment and evaluation” category has shown a fluctuating trend in terms of frequency. The trend in this category almost remained the same in 2001-2005 and 2006-2010 time periods, and decreased in the last time period. The detailed results are presented below:

Table 4.5 Frequency and percentage of assessment and evaluation category in the given time periods.

Time Period	Total number of theses/dissertations	Related to assessment and evaluation category	Percentage
1996-2000	16	2	12.50 %
2001-2005	146	15	10.27 %
2006-2010	280	28	10.00 %
2011-2015	263	16	6.08 %

The trends in these five dominant categories are shown in Figure 4.1.

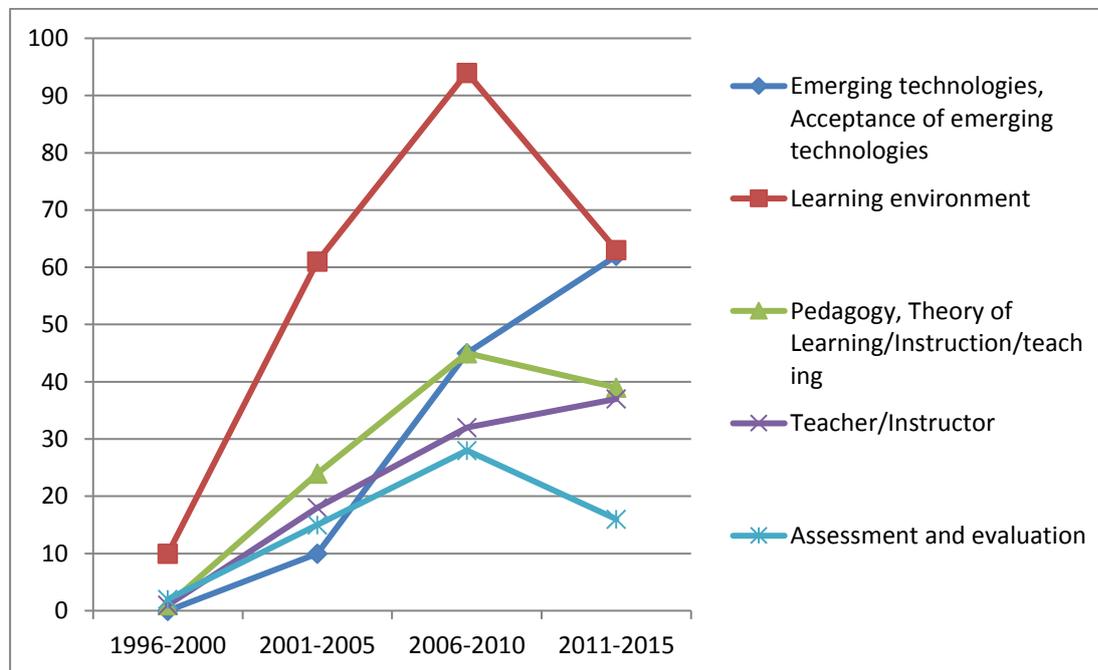


Figure 4.1 Trends in five dominant research topic categories over years

Apart from five dominant category, “learner” category (n=51, 7.23%) received attention of researchers. However, “social/cultural/political issues” category (n=24, 3.40%), and “the field” category (n=13, 1.84%) received less attention. “Human performance technology” category (n=3, 0.43%), and “change management” category (n=7, 0.99%) are the other categories which were least preferred by the researchers.

When we examine the distribution of main research topics according to program type, the results pointed out that “learning environment” category and “emerging technologies, acceptance of emerging technologies” are the most studied research topic in both theses and dissertations. The results also indicated that research topic selection does not change according to program type. Table 4.6 shows distribution of main research topics by years and program type.

Table 4.6 Distribution of main research topics by year and program type.

Main Research Topics		1996 - 2000	2001 - 2005	2006 - 2010	2011 – 2015	Total
MSc	Assessment and evaluation	2	14	27	10	53
	Change management	0	0	4	3	7
	Emerging technologies, acceptance of emerging technologies	0	9	32	34	75
	Learner	1	10	15	16	42
	Learning environment	9	47	71	41	168
	Other	0	1	1	1	3
	Pedagogy, theory of learning/instruction	1	17	36	17	71
	Social/cultural/political issues	0	2	7	10	19
	Teacher/instructor	1	16	25	34	76
	The field	1	2	3	3	9
	Total	15	118	221	169	523
PhD	Assessment and evaluation	0	1	1	6	8
	Emerging technologies, acceptance of emerging technologies	0	1	13	28	42
	Human performance technology	0	1	1	1	3

	Learner	0	2	2	5	9
	Learning environment	1	14	23	22	60
	Other	0	0	1	0	1
	Pedagogy, theory of learning/instruction/teaching	0	7	9	22	38
	Social/cultural/political issues	0	0	1	4	5
	Teacher/instructor	0	2	7	3	12
	The field	0	0	1	3	4
	Total	1	28	59	94	182
	Assessment and evaluation	2	15	28	16	61
	Change management	0	0	4	3	7
	Emerging technologies, acceptance of emerging technologies	0	10	45	62	117
	Human performance technology	0	1	1	1	3
	Learner	1	12	17	21	51
Total	Learning environment	10	61	94	63	228
	Other	0	1	2	1	4
	Pedagogy, theory of learning/instruction/teaching	1	24	45	39	109
	Social/cultural/political issues	0	2	8	14	24
	Teacher/instructor	1	18	32	37	88
	The field	1	2	4	6	13
	Total	16	146	280	263	705

4.2.7 Research Topics Trends by University

The results of this study also showed that selection of research topics vary according to universities. In Ankara University, Gazi University, and METU “learning environment” category is the mostly studied research topic whereas “teacher/instructor” category is the prominent one in Anadolu University, and “emerging technologies and acceptance of emerging technologies” category is mostly preferred in Hacettepe University. In addition, “learning environment” category takes the second place in Hacettepe University. “Social/cultural/political issues” category is studied in METU, Hacettepe University, Anadolu University, and Ankara University; however, in Gazi University none of the theses focused on this category.

In METU, the most studied three main research topics are learning environment (n=50, 41.32%), emerging technologies and acceptance of emerging technologies (n=26, 21.49%), and pedagogy, theory of learning/instruction (n=15, 12.40%) respectively. Figure 4.2 shows the distribution of main research topic categories studied in METU.

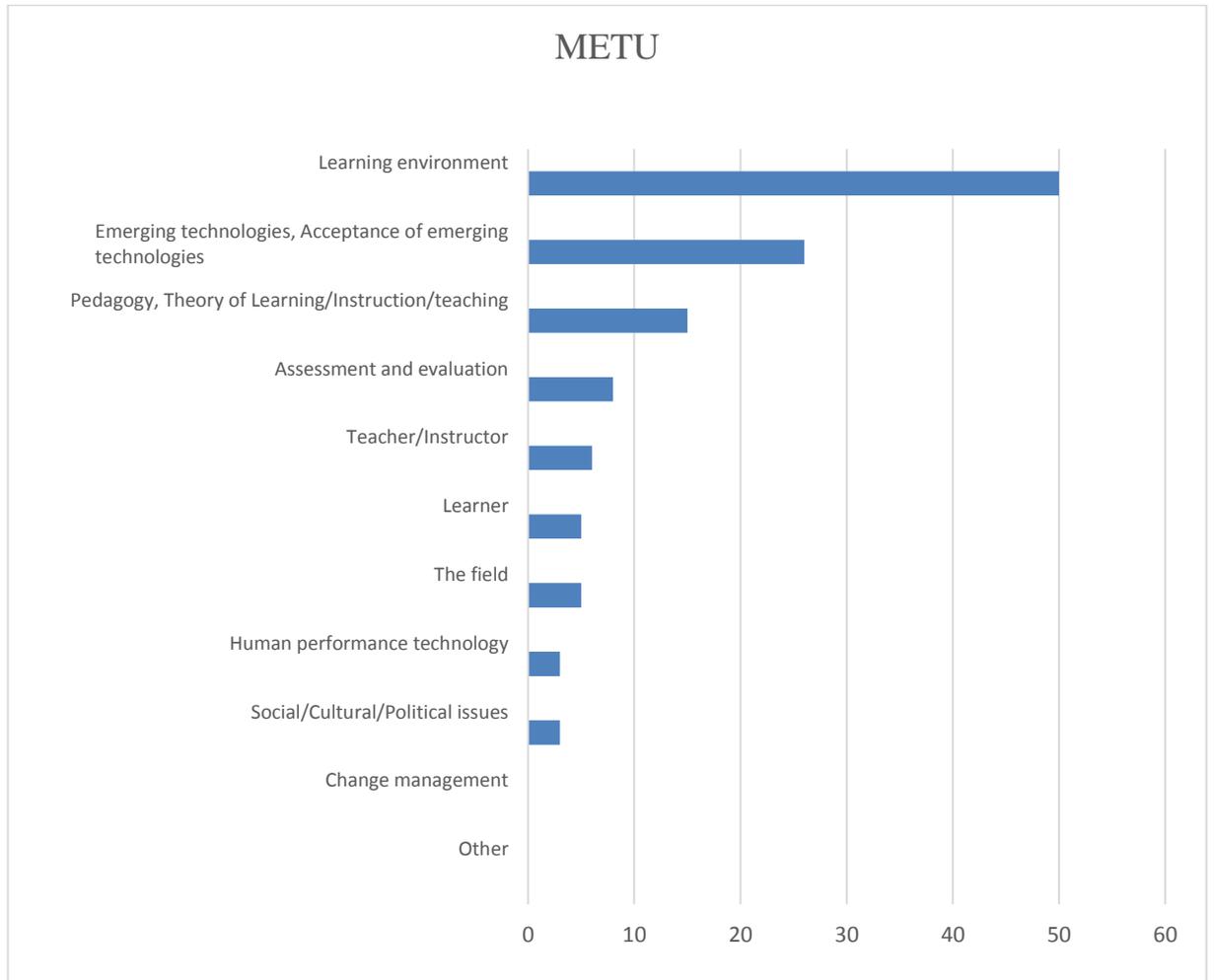


Figure 4.2 Distribution of main research topic categories studied in METU.

In Hacettepe University, the most studied three main research topics are emerging technologies and acceptance of emerging technologies (n=26, 28.57%), learning environment (n=25, 27.47%), and pedagogy, theory of learning/instruction (n=14, 15.38%) respectively. Figure 4.3 shows the distribution of main research topic categories studied in Hacettepe University.

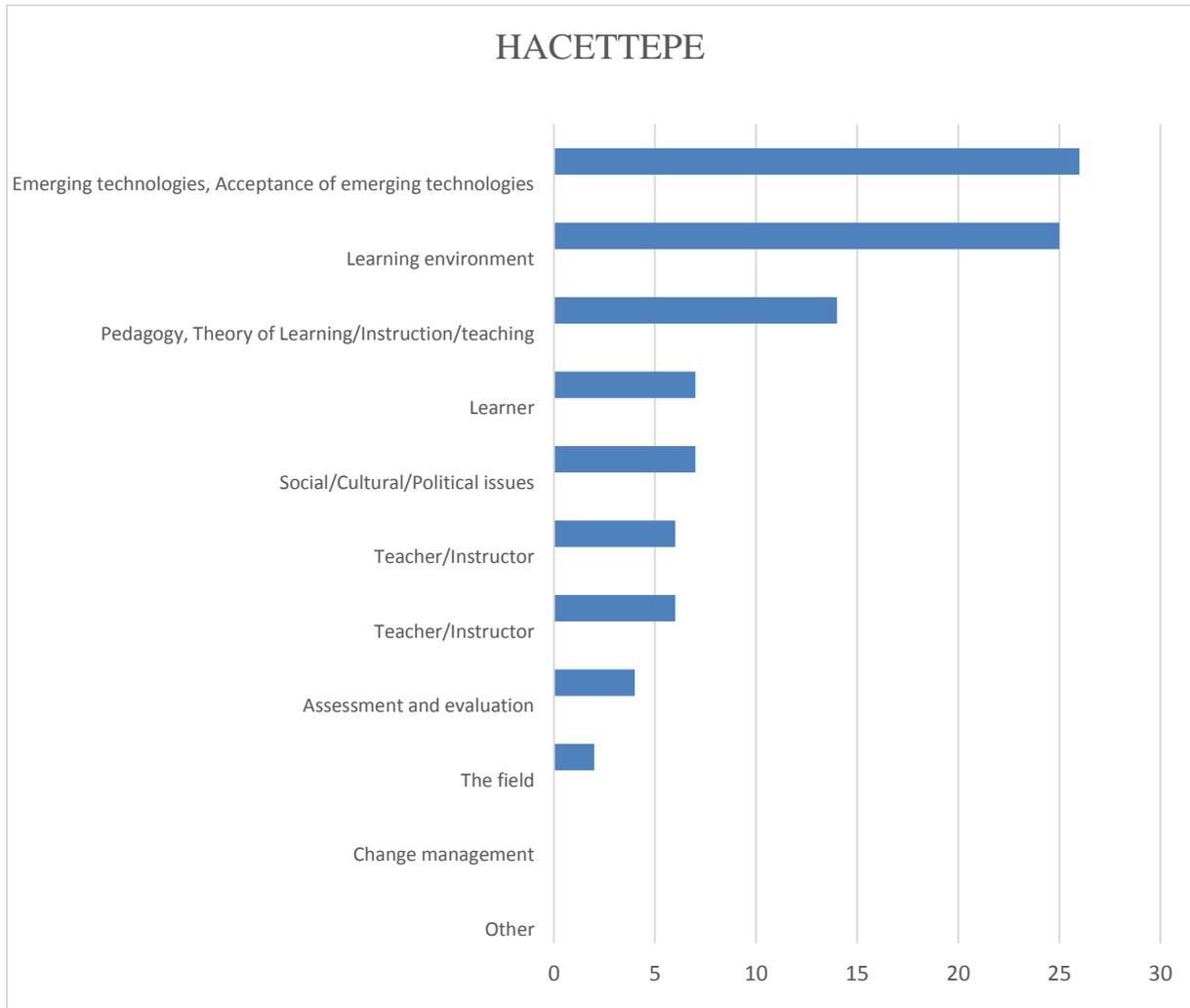


Figure 4.3 Distribution of main research topic categories studied in Hacettepe University.

In Gazi University, the most studied three main research topics are learning environment (n=28, 35.00%), and pedagogy, theory of learning/instruction (n=17, 21.25%), and assessment and evaluation (n=10, 12.50%) respectively. Figure 4.4 shows the distribution of main research topic categories studied in Gazi University.

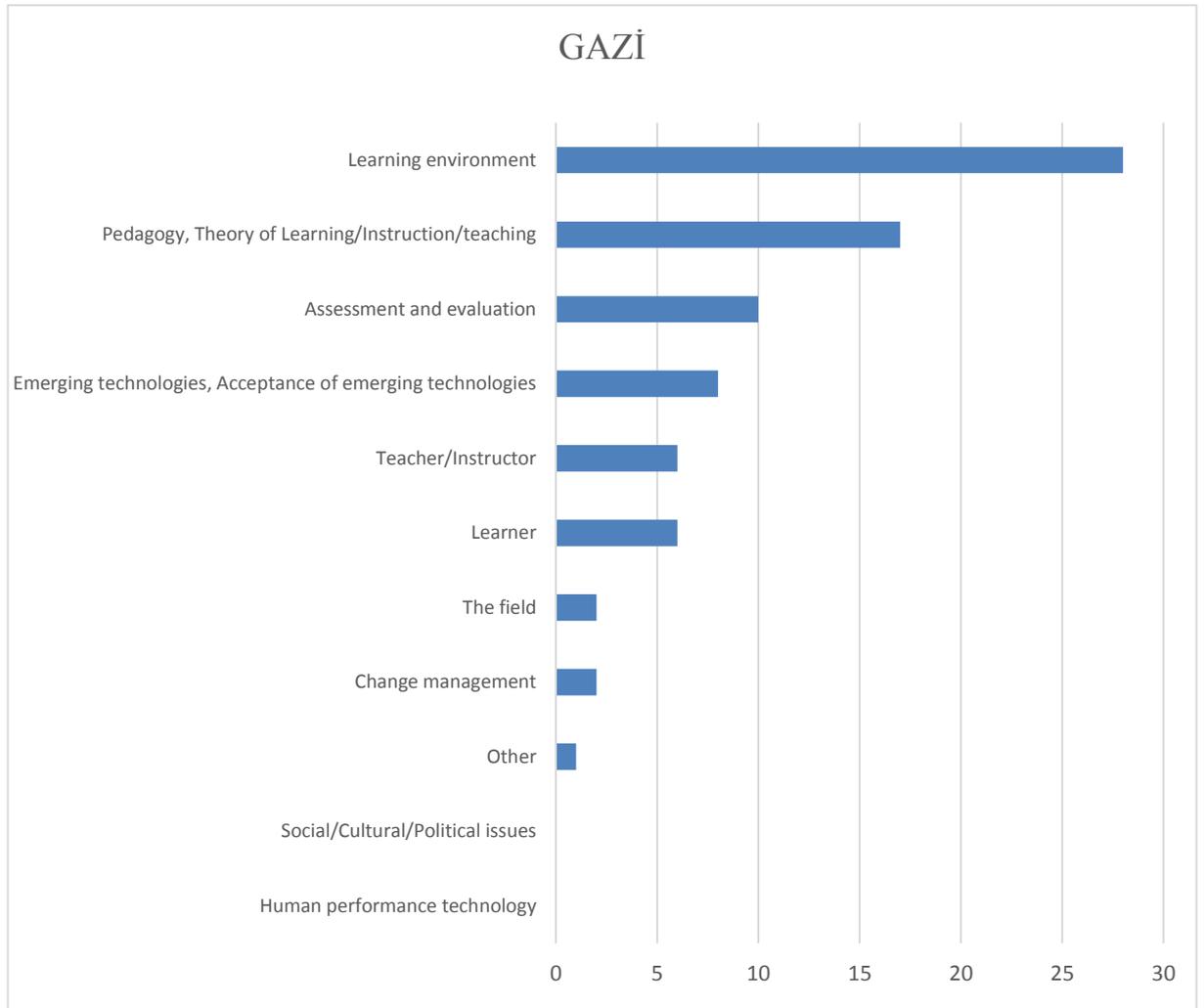


Figure 4.4 Distribution of main research topic categories studied in Gazi University.

In Ankara University, the most studied three main research topics are learning environment (n=44, 36.36%), and pedagogy, theory of learning/instruction (n=27, 22.31%), and teacher/instructor (n=14, 11.57%) respectively. Figure 4.5 shows the distribution of main research topic categories studied in Ankara University.

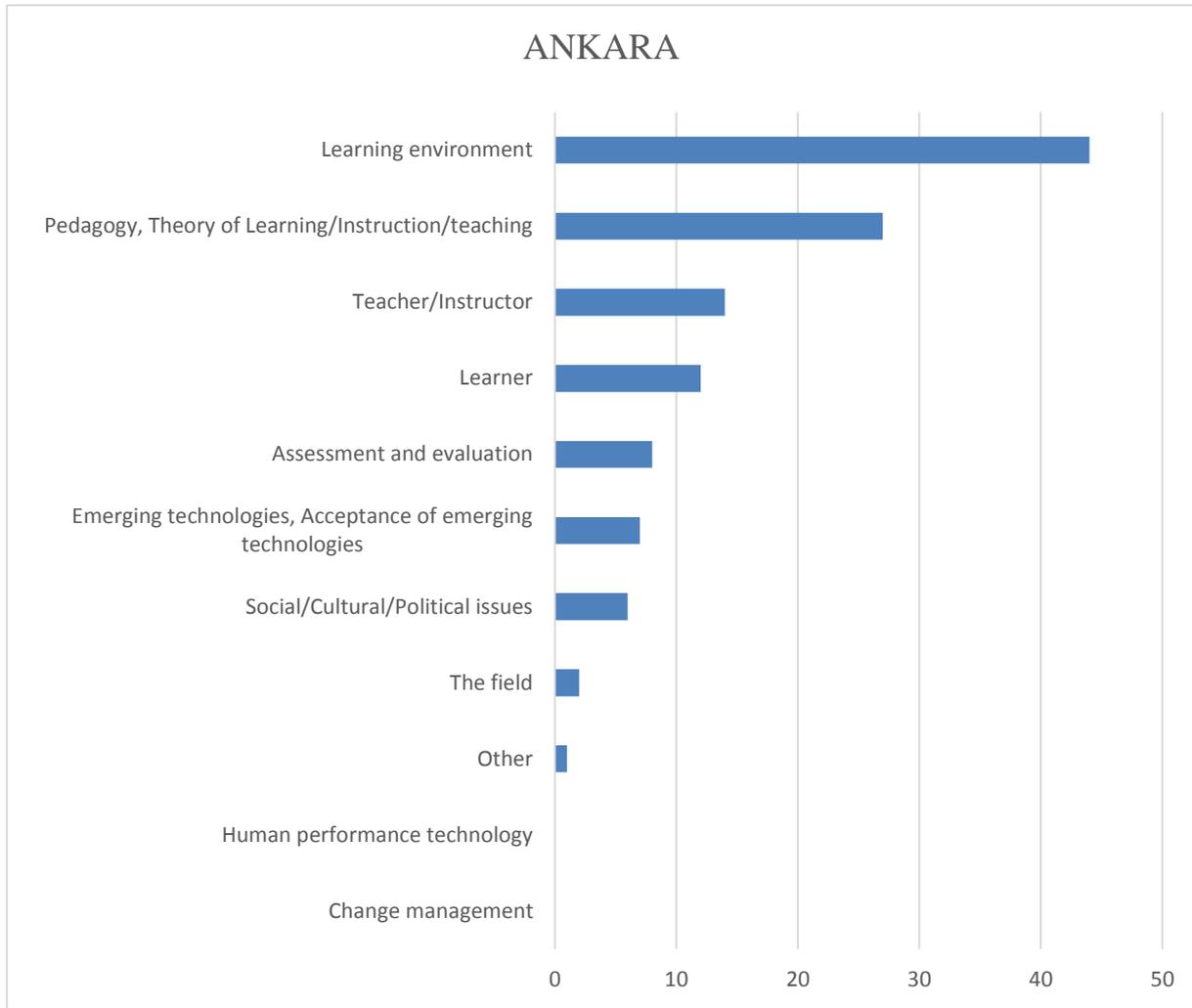


Figure 4.5 Distribution of main research topic categories studied in Ankara University.

In Anadolu University, the most studied three main research topics are teacher/instructor (n=18, 31.58%), emerging technologies and acceptance of emerging technologies (n=14, 24.56%), and learning environment (n=10, 17.54%) respectively. Figure 4.6 shows the distribution of main research topic categories studied in Anadolu University.

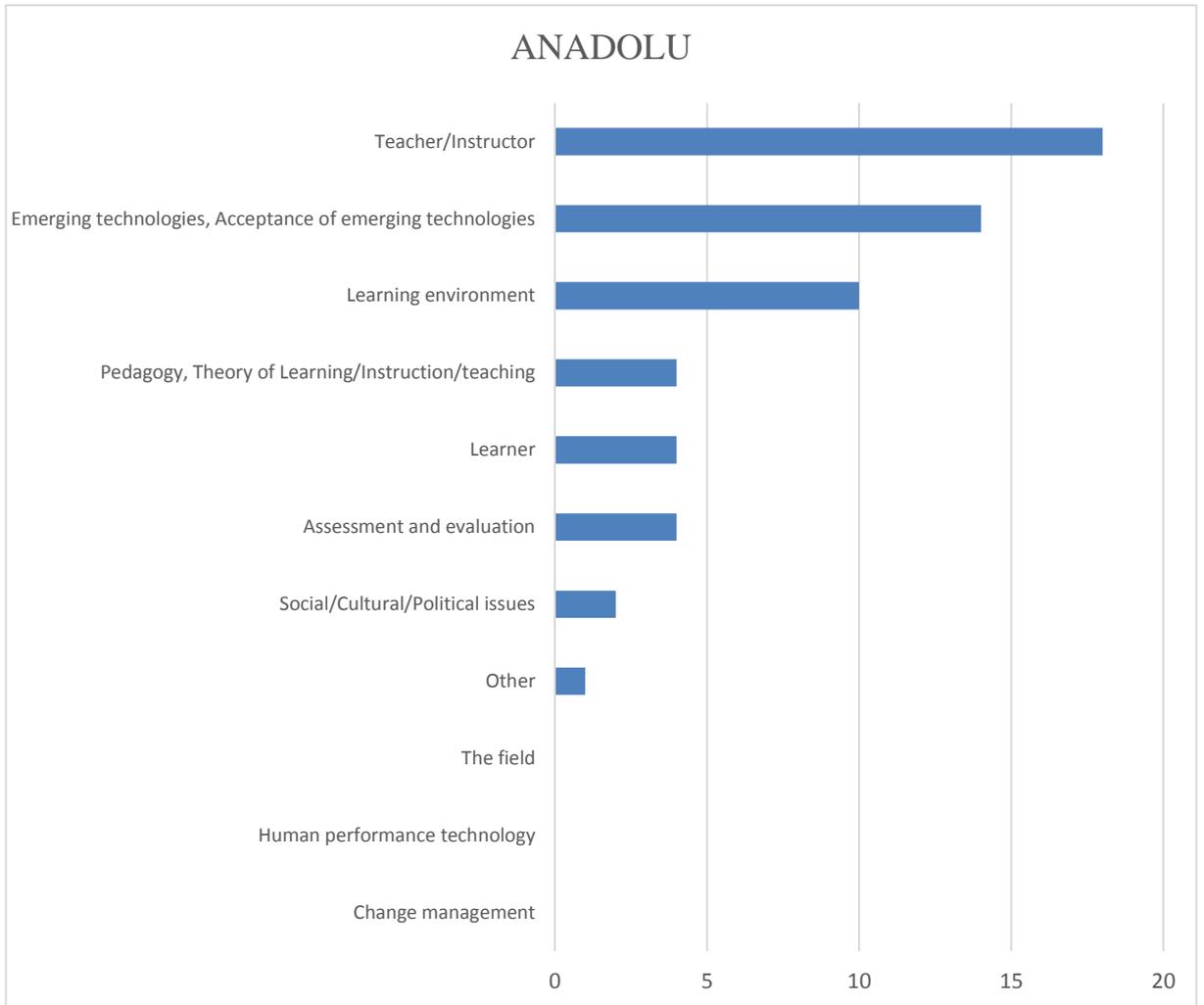


Figure 4.6 Distribution of main research topic categories studied in Ankara University.

Table 4.7 Distribution of main research topics by universities.

	Assessment and evaluation	Change management	Emerging technologies, Acceptance of emerging technologies	Human performance technology	Learner	Learning environment	Other	Pedagogy, Theory of Learning/ instruction/teaching	Social/Cultural/Political issues	Teacher/ Instructor	The field	Total
ANADOLU	4	0	14	0	4	10	1	4	2	18	0	57
ANKARA	8	0	7	0	12	44	1	27	6	14	2	121
ATATURK	0	0	5	0	0	3	0	0	0	3	0	11
BAHCESEHIR	1	1	4	0	0	2	0	0	0	1	0	9
BALIKESIR	0	0	0	0	0	1	0	1	0	1	1	4
BOGAZICI	1	0	0	0	0	1	0	0	0	1	0	3
CUKUROVA	3	1	2	0	3	9	0	7	0	3	0	28
Dokuz Eylul	3	0	1	0	0	4	0	1	1	1	1	12
EGE	0	0	10	0	1	5	0	5	1	3	0	25
FATIH	0	0	1	0	0	0	0	0	0	0	0	1
FIRAT	2	1	1	0	4	3	1	2	1	2	0	17
GAZI	10	2	8	0	6	28	1	17	0	6	2	80
HACETTEPE	4	0	26	0	7	25	0	14	7	6	2	91
KSU	0	0	0	0	0	1	0	0	0	0	0	1
KTU	3	0	2	0	0	13	0	3	0	3	0	24
MARMARA	10	1	2	0	4	10	0	9	3	3	0	42
N. ERBAKAN	0	1	2	0	1	2	0	1	0	2	0	9
METU	8	0	26	3	5	50	0	15	3	6	5	121
SAKARYA	3	0	6	0	3	16	0	3	0	13	0	44
SULEYMAN DEMIREL	1	0	0	0	1	1	0	0	0	2	0	5
Total	61	7	117	3	51	228	4	109	24	88	13	705

Table 4.7 Distribution of main research topics by universities.

4.2.8 Findings Based on Sub-categories

As mentioned before, content analysis data were coded in two different ways. The first analysis of data presented findings according to main research topics in which only one category is chosen for each thesis. In the second analysis, data were coded and analyzed based on sub categories.

The analysis based on sub-categories revealed that “delivery method of training/instruction” (n=279, 21.69%) which is under “learning environment” category, “achievement/motivation/attitude/perception/satisfaction” (n=108, 8.40%) which is under “learner” category, “new technologies” (n=82, 6.38%) which is under “emerging technologies and acceptance of emerging technologies” category, “learning theories” (n=77, 5.99%) which is under “pedagogy, theory of learning/instruction” category, and “teaching/instructional methods” (n=64, 4.98%) which is under “pedagogy, theory of learning/instruction” category have been identified as most popular research topics in the examined theses respectively. Totally, these five dominant research topics constitutes 47.43% of 1286 sub-categories appeared in this analysis.

“Delivery method of training/instruction” sub-category identified as the most popular research topic in the scope of this study. A fluctuating trend has been observed in terms of frequency whereas it has shown a decreasing trend when it is evaluated in terms of percentage. The detailed results are given below:

Table 4.8 Frequency and percentage of delivery method of training/instruction sub-category in the given time periods.

Time Period	Total number of theses/dissertations	Related to delivery method of training/instruction sub-category	Percentage
1996-2000	28	9	32.14 %
2001-2005	269	66	24.54 %
2006-2010	501	120	23.95 %
2011-2015	488	84	17.21 %

“Achievement/Motivation/Attitude/Perception/Satisfaction” sub-category, which is the second most popular one, has shown a fluctuating trend in terms of frequency. On the other hand, it almost remained same in terms of percentage. The detailed results are presented below:

Table 4.9 Frequency and percentage of achievement/motivation/attitude/perception/satisfaction sub-category in the given time periods.

Time Period	Total number of theses/dissertations	Related to achievement / motivation /attitude /perception / satisfaction sub-category	Percentage
1996-2000	28	2	7.14 %
2001-2005	269	19	7.06 %
2006-2010	501	45	8.98 %
2011-2015	488	42	8.61 %

An increasing trend in terms of both frequency and percentage is observed in “New technologies” sub-category in given time periods. The detailed results are presented below:

Table 4.10 Frequency and percentage of new technologies sub-category in the given time periods.

Time Period	Total number of theses/dissertations	Related to new technologies sub-category	Percentage
1996-2000	28	0	0.00 %
2001-2005	269	5	1.86 %
2006-2010	501	33	6.59 %
2011-2015	488	44	9.02 %

“Learning theories” sub-category has shown an increasing trend in terms of both frequency and percentage from 2001-2005 through 2006-2010 time periods. The trend in this category almost remained the same in 2011-2015 time period. The detailed results are presented below:

Table 4.11 Frequency and percentage of learning theories sub-category in the given time periods.

Time Period	Total number of theses/dissertations	Related to learning theories sub-category	Percentage
1996-2000	28	0	0.00 %
2001-2005	269	16	5.95 %
2006-2010	501	31	6.19 %
2011-2015	488	30	6.15 %

A fluctuating trend in terms of both frequency and percentage is observed in “Teaching/Instructional methods” sub-category. The detailed results are presented below:

Table 4.12 Frequency and percentage of learning theories sub-category in the given time periods.

Time Period	Total number of theses/dissertations	Related to learning theories sub-category	Percentage
1996-2000	28	1	3.57 %
2001-2005	269	15	5.58 %
2006-2010	501	31	6.19 %
2011-2015	488	17	3.48 %

The trends in these five dominant sub-categories are shown in Figure 4.7.

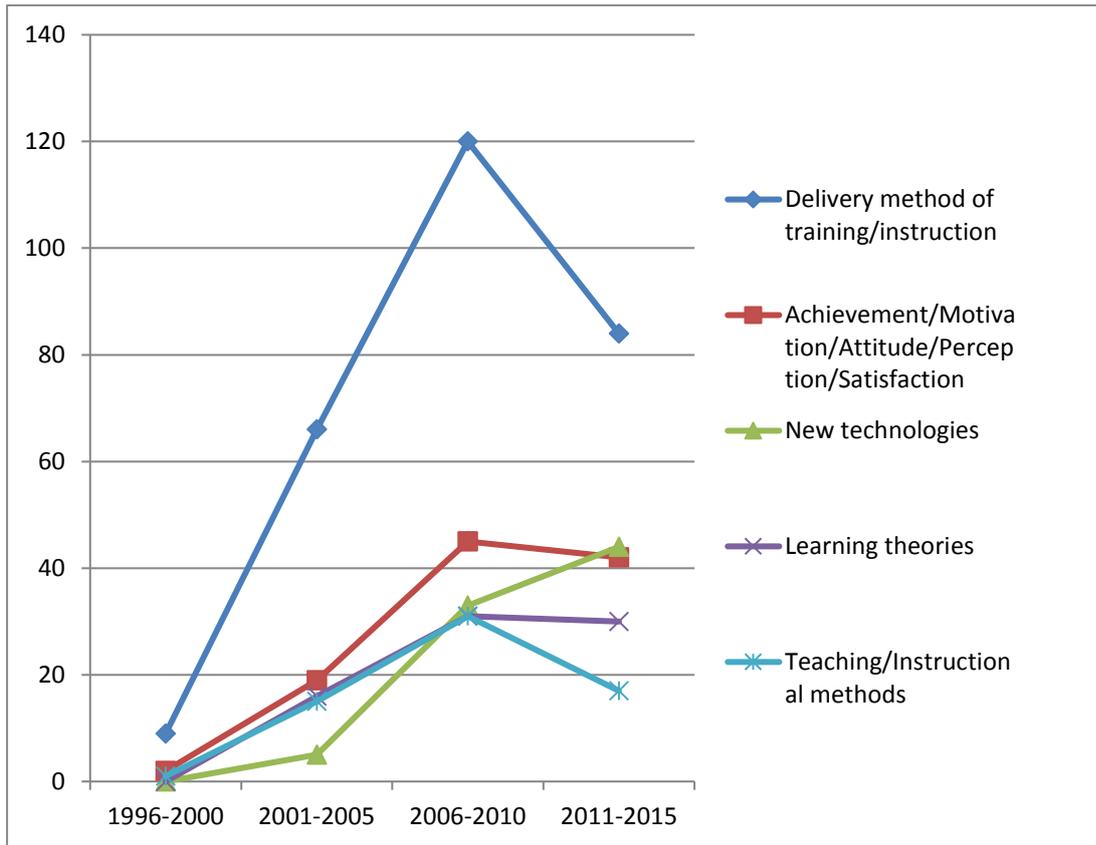


Figure 4.7 Trends in five dominant research topic sub- categories over years.

In addition, “technology acceptance models/enablers/barriers” sub-category (n=58, 4.51%), “technology competency” sub-category (n=52, 4.04%), “design/development of learning environments/instructional materials” sub-category (n=50, 3.89%), “effectiveness of learning environment” sub-category (n=44, 3.42%), “learner control” sub-category (n=49, 3.81%), “learning styles/cognitive styles” sub-category (n=43, 3.34%), and “program/course/material evaluation” sub-category (n=41, 3.19%) received attention of researchers.

On the other hand, “democracy/equality”, “history/trends/future”, “informal learning”, “education policy/ICT policy”, “standards/competencies/professionals”, and “appropriate ICT use’ are identified as research topics that received less attention of researchers. Table 4.13 summarizes the findings of research topics selection according to years.

Table 4.13 Distribution of research topics by years.

Research Topics	1996 - 2000	2001 - 2005	2006 - 2010	2011 – 2015	Total
Achievement / Motivation /Attitude / Perception / Satisfaction	2	19	45	42	108
Appropriate ICT use	0	1	4	12	17
Change management theories/models	0	0	0	1	1
Communication	0	7	10	6	23
Technology Competency	1	12	17	22	52
Delivery method of training/instruction	9	66	120	84	279
Democracy/Equality	0	0	1	2	3
Design/development of learning environments/Instructional materials	1	10	15	24	50
Education Policy/ICT Policy	0	2	5	5	12
Effectiveness of learning environment	6	18	9	11	44
History/Trends/Future	0	0	4	0	4
IDD Theories/Models	1	2	2	4	9
Individual differences	1	7	5	5	18
Informal learning	0	0	1	1	2
Knowledge management	0	2	1	2	5
Learner control	0	18	17	14	49
Learning outcomes/objectives	0	5	8	5	18
Learning styles/Cognitive styles	0	10	17	16	43
Learning theories	0	16	31	30	77
Motivation/Attitude/Perception	0	7	15	15	37
Motivation/Satisfaction/Feedback	0	1	5	9	15
Nationwide ICT projects	0	3	10	14	27
New technologies	0	5	33	44	82
Other	2	7	4	5	18
Program/course/material evaluation	2	9	17	13	41
Standards / Competencies / Professionals	0	1	3	7	11
Student's technology use / Competency	1	3	7	10	21
Teacher education/Training/Professional development	0	6	12	14	32

Teacher / Instructor / Administrator factors	1	1	8	9	19
Teaching / Instructional methods	1	15	31	17	64
Technology acceptance models / Enablers / Barriers	0	6	22	30	58
Technology based assessment	0	5	8	6	19
Usability studies / Eye Tracking	0	5	14	9	28
Total	28	269	501	488	1286

4.2.9 Summary

- 1) It is found that learning environment category (n=228, 32.34%) is the most popular research topic. It has followed a decreasing trend over the years.
- 2) “Delivery method of training/instruction”, a sub-category of “learning environment”, was identified as the most popular research topic in the scope of this study (n=279, 21.69%).
- 3) “Emerging technologies, acceptance of emerging technologies” category (n=117, 16.59%), which is the second most popular one, has shown a steadily increasing trend.
- 4) An increasing trend is observed in “New technologies”, a sub-category of “Emerging technologies, acceptance of emerging technologies” (n=82, 6.38%).
- 5) “Social/cultural/political issues” category (n=24, 3.40%), and “The field” category (n=13, 1.84%) received less attention.
- 6) ‘Learner’ category (n=51, 7.23%) has also received attention. Its sub-category “achievement/motivation/attitude/perception/satisfaction” (n=108, 8.40%) has the second highest number among other sub-categories.
- 7) Pedagogy, theory of learning/instruction (n=109, 15.46%) was identified as the third most popular category. Its most preferred sub-category is “learning theories” (n=77, 5.99%).
- 8) “Teacher/instructor” category (n=88, 12.48%) followed an increasing trend in 2011-2015 time period.

- 9) “Democracy/equality”, “history/trends/future”, “informal learning”, “education policy/ICT policy”, “standards/competencies/professionals”, and “appropriate ICT use’ are identified as research topics that received less attention of researchers.

Figure 4. 8 shows distribution of main research topics. The most five popular categories were presented, and the rest of them were shown as “Other main research topics”.

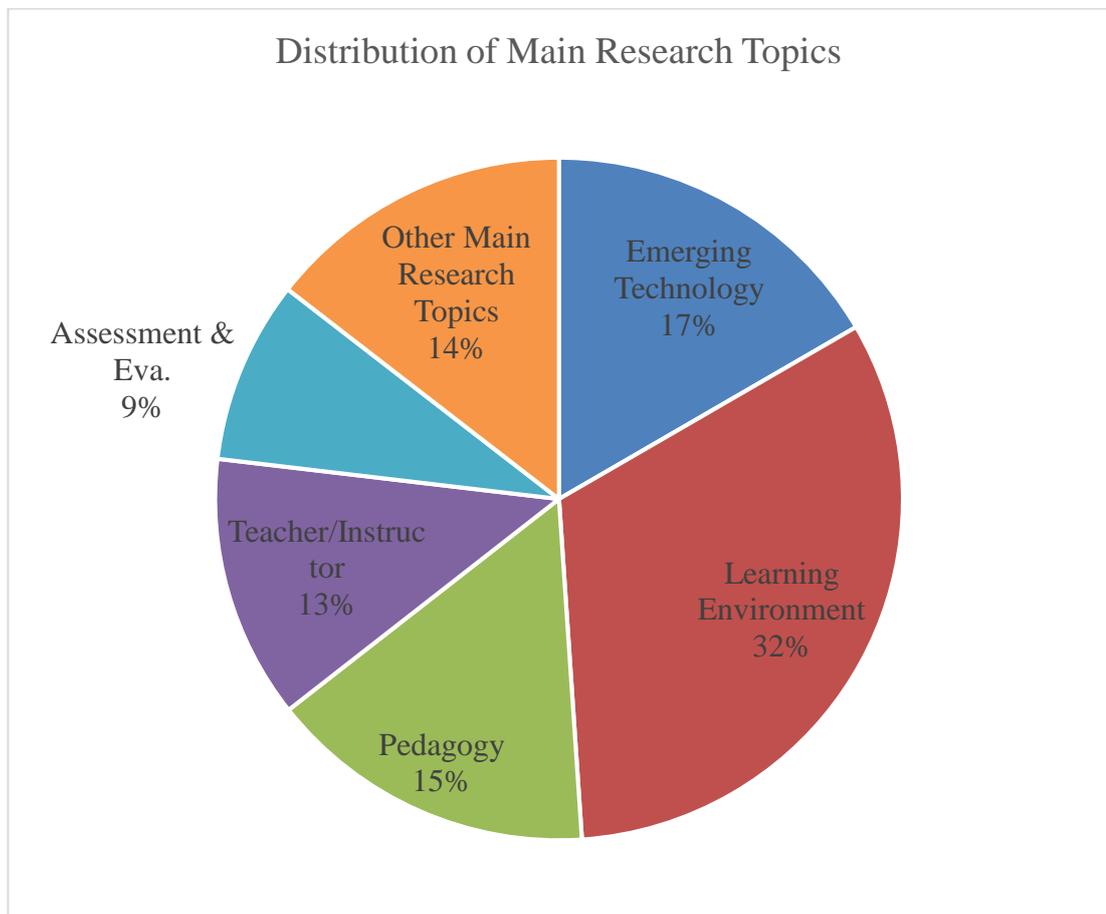


Figure 4.8 Distribution of main research topics

Figure 4.9 shows distribution of secondary research topics. The most five popular sub-categories were presented, and the rest of them were shown as “Other secondary research topics”.

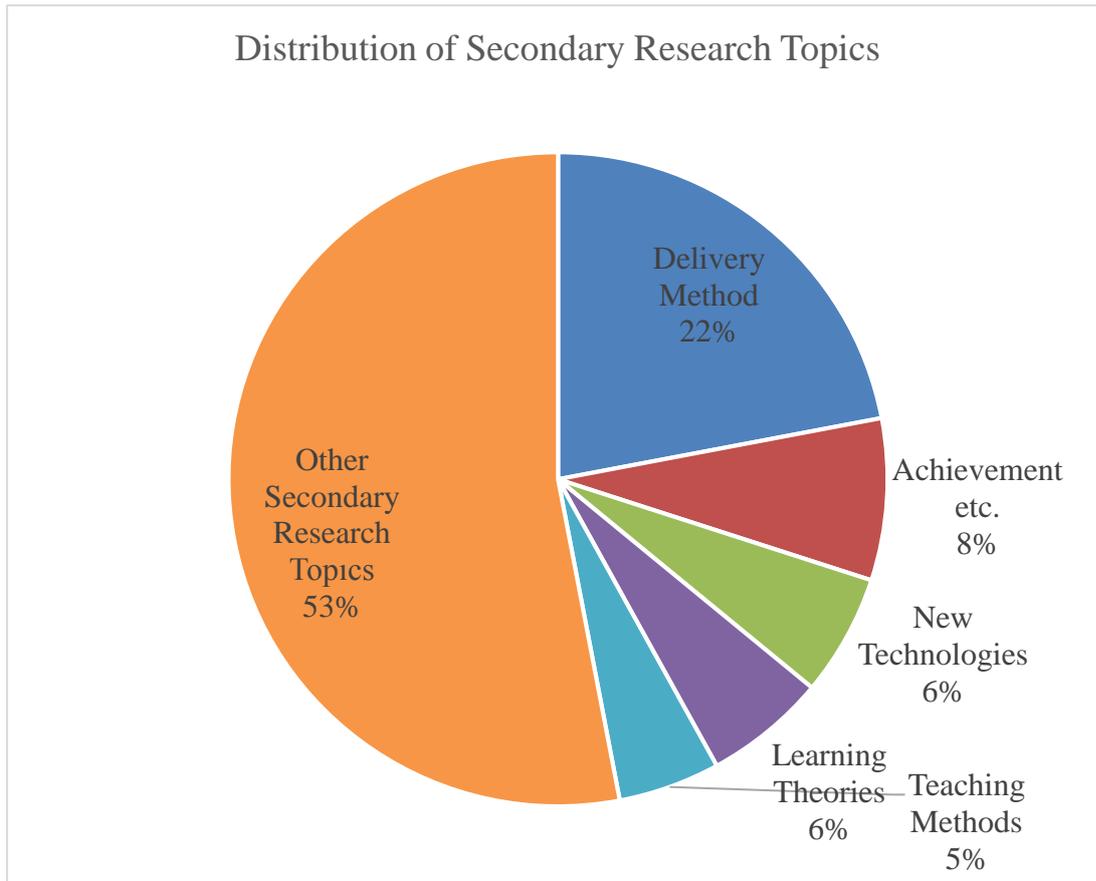


Figure 4.9 Distribution of main research topics

4.2.10 Research Methods Trends in Theses and Dissertations

Theses and dissertations were analyzed in terms of research method employed in order to find out which research methods have been emphasized and which of them received less attention.

4.2.10.1 Experimental Methods

The results showed that experimental research methods including all types of experimental method (n=237, 33.61%) constituted majority of educational technology research methods among the analyzed studies. When we examine how prevalence of experimental methods fluctuate over years, the results are as below;

Table 4.14 Frequency and percentage of experimental method in the given time periods.

Time Period	Total number of theses/dissertations	Used experimental research methods	Percentage
1996-2000	16	8	50.00 %
2001-2005	146	50	34.24 %
2006-2010	280	107	38.21 %
2011-2015	263	72	27.37 %

The results indicated that experimental methods showed an increasing trend until 2011-2015 time period in terms both frequency and percentage. However, in 2011-2015 time period, a decrease in both frequency and percentage of experimental methods has been observed.

4.2.10.2 Survey Method

Survey research method has been identified as the second mostly preferred research method among the analyzed studies (n=129, 18.29%). Except from 1996-2000 time period in which it constituted 37.50% of all studies (n=6), it has been observed that survey research methods followed almost a consistent trend over years, in other words, it's prevalence in literature has not changed over years in terms of percentage. On the other hand, 85.19% increase is observed between 2001-2005 and 2006-2010 time periods in terms of frequency. To illustrate, the prevalence of survey research methods is given below:

Table 4.15 Frequency and percentage of survey method in the given time periods.

Time Period	Total number of theses/dissertations	Used survey methods	Percentage
1996-2000	16	6	37.50 %
2001-2005	146	26	17.80 %
2006-2010	280	50	17.85 %
2011-2015	263	47	17.87 %

4.2.10.3 Case Study

Case study has been identified as the third mostly preferred research method (n=72, 10.21%). Similar to survey research method, it has followed almost a consistent trend over years. It has gained popularity starting from 2001-2005 time period, and has sustained its popularity since then. It has shown slightly increasing trend in terms of the frequency over the years. However, it has shown a fluctuating trend in terms of percentage. The trend observed in case study is shown as below;

Table 4.16 Frequency and percentage of case study in the given time periods.

Time Period	Total number of theses/dissertations	Used case study	Percentage
1996-2000	16	1	6.25 %
2001-2005	146	20	13.70 %
2006-2010	280	24	8.57 %
2011-2015	263	27	10.27 %

4.2.10.4 Mixed Method Research

The results of this study showed that mixed method research was the fourth most popular research method among the studied literature (n=68, 9.65%). It is observed that there has been growing interest to this method over the years, and it has followed an increasing trend in terms of both frequency and percentage. This is the only research

method that showed a continuous increase in terms of trend among other popular research methods. Trend observed in mixed method research is presented below:

Table 4.17 Frequency and percentage of mixed method in the given time periods.

Time Period	Total number of theses/dissertations	Used mixed methods	Percentage
1996-2000	16	0	0.00 %
2001-2005	146	4	2.74 %
2006-2010	280	24	8.57 %
2011-2015	263	40	15.21 %

4.2.10.5 Correlational Research

Correlational research methods were identified as the fifth mostly preferred research method in the scope of this study (n=45, 6.38%). It is observed that there have been slight changes in how correlational research methods distribute by years in terms of frequency. On the other hand, it has shown a slightly fluctuating trend in terms of percentage. To explain, trend seen in correlational research is as below;

Table 4.18 Frequency and percentage of mixed method in the given time periods.

Time Period	Total number of theses/dissertations	Used correlational research	Percentage
1996-2000	16	1	6.25 %
2001-2005	146	13	8.90 %
2006-2010	280	16	5.71 %
2011-2015	263	17	6.46 %

Figure 4.10 shows how these five dominant research methods' trends change over time.

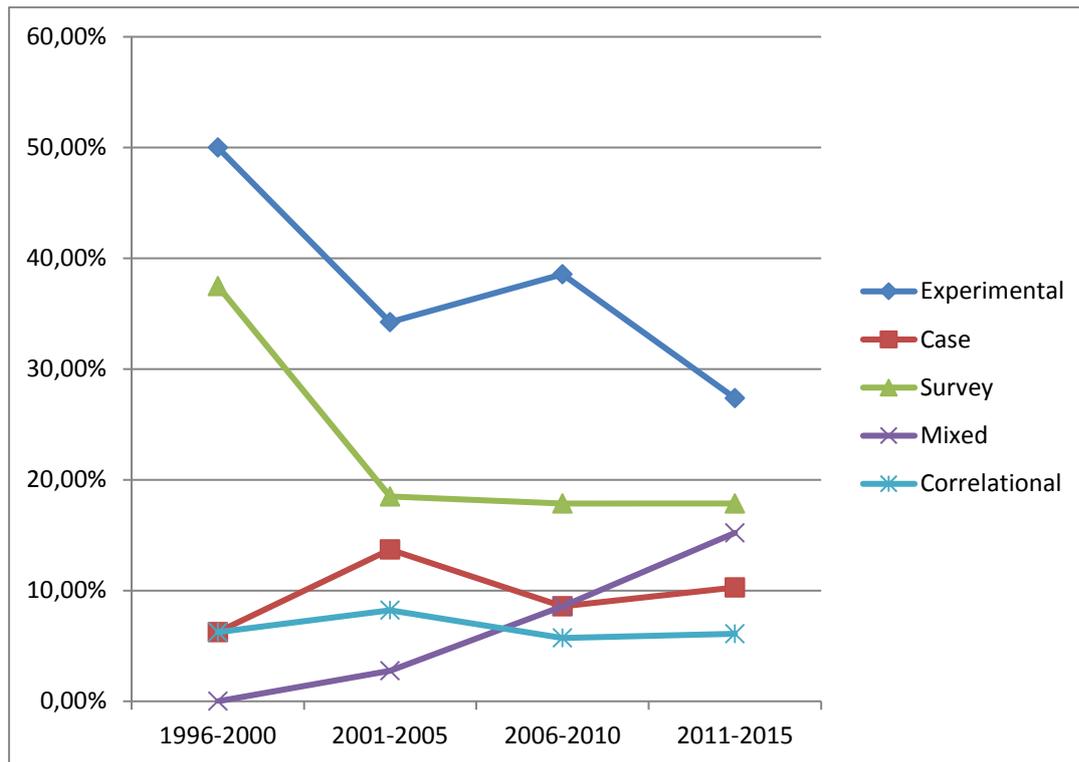


Figure 4.10 Fluctuation of trends in five most popular research methods over years.

The findings of this study revealed that quantitative research methods including experimental methods (n=237, 33.61%), survey method (n=129, 18.29%), correlational research (n=47, 6.67%), descriptive studies (n=39, 5.53%), causal comparative methods (n=7, 0.99%), and meta-analysis studies (n=4, 0.56%) highly dominated educational technology research practices. In total, quantitative research methods (n=463, 65.67%) constitute majority of all research methods used in the analyzed thesis.

Despite the dominance of quantitative research methods in general, the findings of this study indicated that qualitative research methods have received attention in recent years. Case study is traced as the most popular qualitative research method (n=72, 10.21%). Apart from case study, design based research/developmental research (n=18, 2.55%), qualitative research whose genre is not specified by the author of the thesis or dissertation (n=13, 1.84%), action research (n=12, 1.70%), phenomenological research

(n=10, 1.42%), and formative research (n=5, 0.71%) constitute 8.23% of all research methods used in the analyzed thesis. Including case study, qualitative research methods comprise 18.44% of research methods in examined theses. The employment of action research, formative research, phenomenological research, design based/developmental research, and formative research chiefly emerged after 2006. Table 4.19 shows the distribution of research methods employed in examined theses by year.

Table 4.19 Distribution of research methods employed in examined theses by given time period.

Research Method	Time Periods				
	1996 - 2000	2001 - 2005	2006 - 2010	2011 – 2015	Total
Action Research	0	0	7	5	12
Case Study	1	20	24	27	72
Causal Comparative	0	1	3	3	7
Content Analysis	0	0	4	2	6
Correlational	1	13	16	17	47
DBR/Developmental	0	0	3	15	18
Descriptive	0	18	12	9	39
Experimental	8	50	107	72	237
Formative	0	1	1	3	5
Literature	0	3	2	1	6
Meta-Analysis	0	1	3	0	4
Mixed	0	4	24	40	68
Other	0	6	19	7	32
Phenomenological	0	0	2	8	10
Qualitative	0	3	3	7	13
Survey	6	26	50	47	129
Total	16	146	280	263	705

- The research methods were taken as they were stated in by their authors. The researcher did not make any judgments or manipulation on the name of the research methods.

“Other” category included the studies whose research design was not written by the author (n=14), studies employed qualitative and quantitative methods but did not label them as mixed or multi method (n=6), eye tracking and usability studies(n=3), tool or software development studies (n=3), ontology development studies (n=2), analysis of logs (n=1), questionnaire development (n=1), decision tree (n=1), and quantitative research whose genre was not specified (n=1). In total, the frequency of this category is 32.

4.2.10.6 Research Methods Trends according to Program Type

In terms evaluating research method trends according to program type, the findings of this study indicated that experimental studies (n=172, 32.89%), survey studies (n=116, 22.18%), case studies (n=52, 9.94%), correlational studies (n=38, 7.27%), and descriptive studies (n=35, 6.69%) are the mostly preferred research methods employed in Master’s theses respectively. Furthermore; formative research (n=5, 0.96%), literature review studies (n=6, 1.15%), meta-analysis studies (n=4, 0.76%), and content analysis (n=6, 1.15%) are only used in Master’s theses.

As for research methods employed in dissertations, experimental studies (n=65, 35.71%) take the first place as it was the case in Master’s theses, and followed by mixed method studies (n= 37, 20.33%), case studies (n=20, 10.99%), design based/developmental research (n=16, 8.79%), and survey studies (n=14, 7.69%) respectively. Design based/developmental research is mostly employed in dissertations whereas phenomenological research has received more attention in Master’s theses. One other important finding is that survey studies constitute 22.18% of all Master’s theses while it constitutes only 7.69% of all dissertations. The distribution of research methods according to program type is presented in Table 4.20.

Table 4.20 Distribution of research methods by program type

Research Method	MSc		PhD		Total
	Frequency	Percent	Frequency	Percent	
Action Research	4	0.76	8	4.40	12
Case Study	52	9.94	20	10.99	72
Causal Comparative	5	0.96	2	1.10	7
Content Analysis	6	1.15	0	0	6
Correlational	38	7.27	9	4.95	47
DBR/Developmental	2	0.38	16	8.79	18
Descriptive	35	6.69	4	2.20	39
Experimental	172	32.89	65	35.71	237
Formative	5	0.96	0	0	5
Literature	6	1.15	0	0	6
Meta-Analysis	4	0.76	0	0	4
Mixed	31	5.93	37	20.33	68
Other	30	5.74	2	1.09	32
Phenomenological	7	1.34	3	1.64	10
Qualitative	10	1.91	3	1.64	13
Survey	116	22.18	13	7.14	129
Total	523	100	182	100	705

Figure 4.11 shows the distribution of research methods by program type.

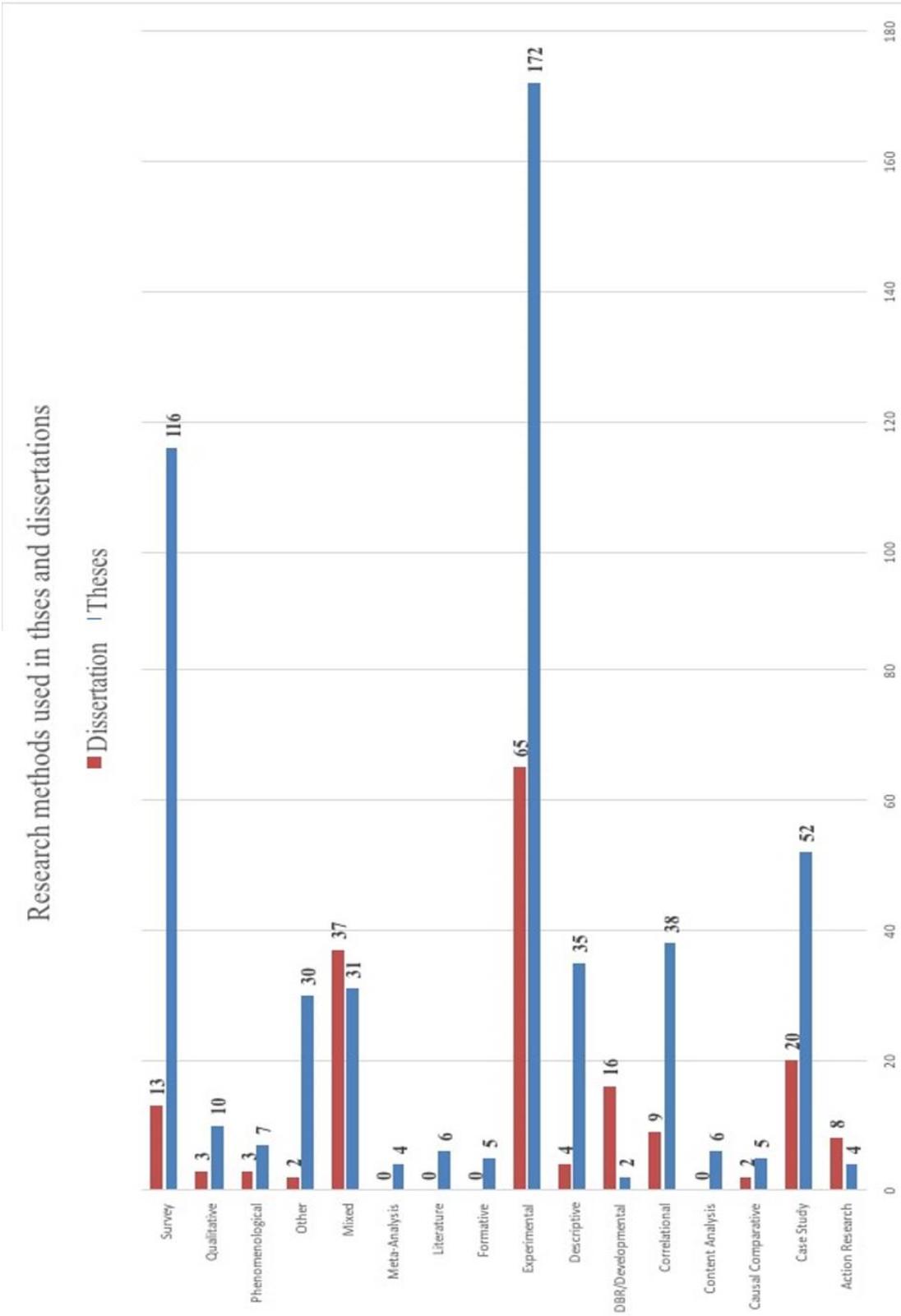


Figure 4.11 Distribution of research methods by program type

Figure 4.11 Distribution of research methods by program type

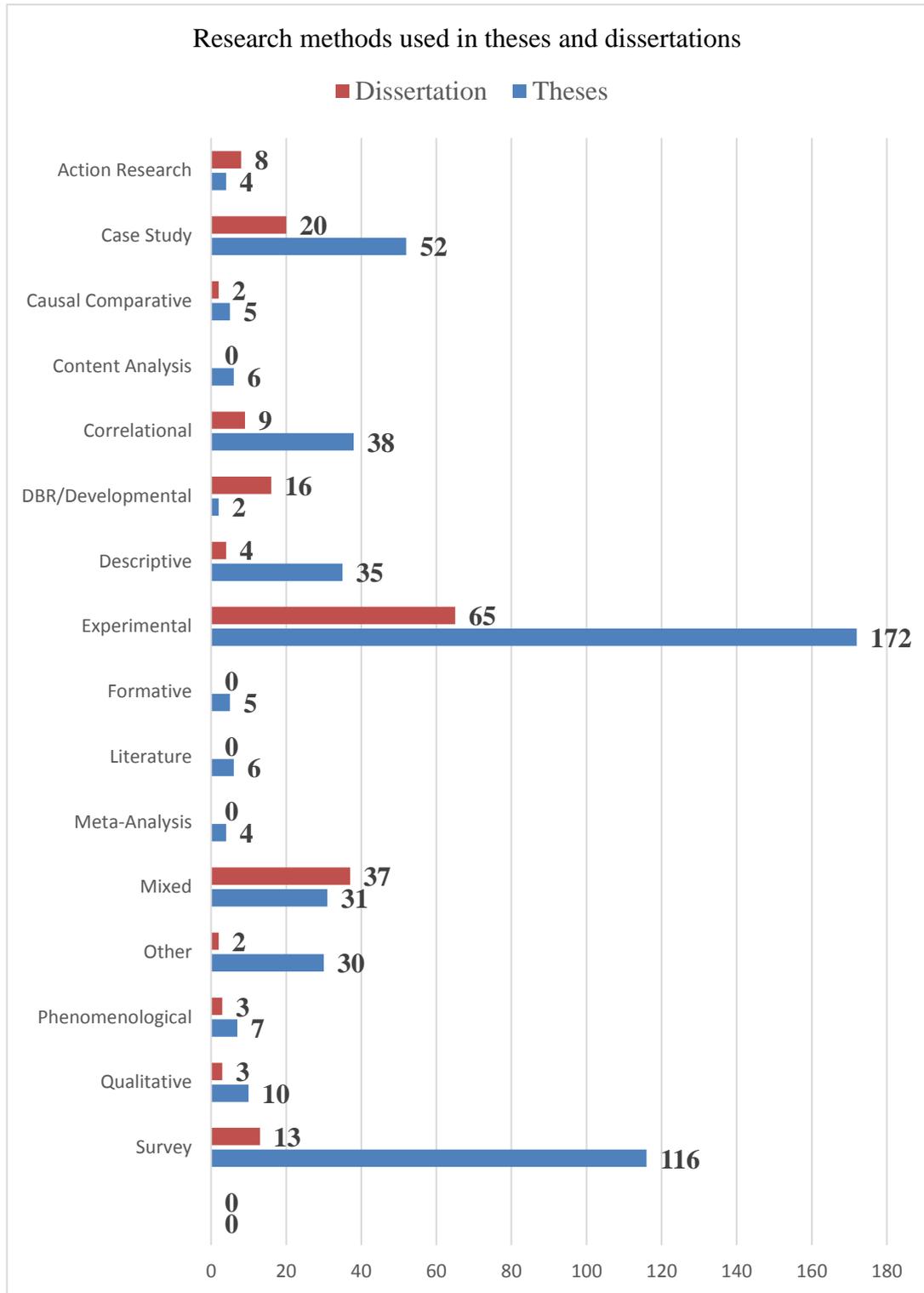


Figure 4.12 Distribution of research methods used in theses and dissertations

4.2.10.7 Research Methods Trends according to Universities

The results of current study revealed that selection of research methods vary by university. One important finding is that majority of thesis completed in Ankara University where 121 theses and dissertations were completed, and which has one of the highest number of thesis, employed experimental (n=67, 55.37%) and survey (n=35, 28.93%) methods, therefore, 84.30% of all thesis completed in Ankara University preferred quantitative methods. In other words, there is slight diversity in research methods. As Ankara University is one of the top universities in terms of number of completed thesis in the field, it has potential to influence the trends.

On the other hand, METU in which 121 theses and dissertations completed, shows diversity in selection of research methods. 47.93% of thesis employed qualitative research methods including case study (n=31, 25.62%), action research (n=9, 7.44%), design based/developmental research (n=7, 5.79%), formative research (n=1, 0.83%), phenomenological research (n=3, 2.48%), and basic qualitative research (research genre not specified by the authors of the thesis) (n=7, 5.79%). In addition, mixed method research (n=29, 23.97%) is identified as one of the most popular method in METU. Unlike Ankara University, experimental method (n=7, 5.79%) is one of the least preferred research methods in METU.

It is observed that Hacettepe University has also diversity in research method selection, however, experimental method (n=25, 27.47%) takes the first place in research methods. Similarly, in Anadolu University researchers employ wide range of research methods where survey is the most popular research method (n=18, 31.58%). The researchers in Gazi University and Marmara University prefers experimental methods mostly (n=41, 51.25%; n=19, 45.25%). Survey research (n=21, 47.73%) has been identified as the most popular research method in Sakarya University which has only Master's degree program; and followed by experimental research (n=14, 31.82%). Table 4.4 presents detailed information about research method distribution by university for top six universities in terms of number of completed thesis.

Table 4.21 Distribution of research methods by university

UNIVERSITY	RESEARCH METHOD	TOTAL
ANADOLU	Action Research	2
	Case Study	5
	Correlational	8
	DBR/Developmental	3
	Descriptive	4
	Experimental	9
	Mixed	8
	Survey	18
	Total	57
ANKARA	Case Study	1
	Content Analysis	1
	Correlational	6
	Descriptive	3
	Experimental	67
	Literature	3
	Mixed	3
	Other	2
	Qualitative	1
	Survey	34
	Total	121
GAZI	Case Study	6
	Causal Comparative	1
	Content Analysis	1
	Correlational	2
	Descriptive	3
	Experimental	41

	Formative	2
	Mixed	6
	Other	2
	Phenomenological	1
	Qualitative	2
	Survey	13
	Total	80
	Case Study	4
	Causal Comparative	5
	Content Analysis	1
	Correlational	16
	DBR/Developmental	5
	Descriptive	11
	Experimental	24
HACETTEPE	Formative	2
	Literature	1
	Mixed	6
	Other	8
	Qualitative	1
	Survey	7
	Total	91
	Case Study	5
	Content Analysis	1
	Correlational	4
	Experimental	19
MARMARA	Literature	1
	Meta-Analysis	3
	Mixed	1
	Qualitative	1

	Survey	7
	Total	42
	Action Research	9
	Case Study	31
	Causal Comparative	1
	Content Analysis	1
	DBR/Developmental	7
	Descriptive	13
	Experimental	7
METU	Formative	1
	Mixed	29
	Other	7
	Phenomenological	3
	Qualitative	7
	Survey	5
	Total	121
	Correlational	4
	DBR/Developmental	1
	Experimental	14
	Mixed	1
SAKARYA	Other	1
	Phenomenological	2
	Survey	21
	Total	44

4.2.10.8 Summary

- 1) The results of this section indicated that experimental methods (n=238, 33.76%) has the highest number among other research methods. The interest in experimental method showed increase until 2011-2015 time period, and decreased in 2011-2015 time period.
- 2) Survey research method (n=130, 18.44%) has the second highest number among other research methods.
- 3) Case study (n=72, 10.21%) has the third highest number among other research methods, and followed a consistent trend.
- 4) Mixed method research (n=68, 9.65%) has the fourth highest number among other research methods, and it has followed steadily increasing trend.
- 5) In total, quantitative research methods (n=462, 65.53%) constitute majority of all research methods used in the analyzed thesis.
- 6) It is observed that qualitative research methods have received attention in the recent years. Action research (n=12, 1.70%), design based research/developmental research (n=18, 2.55%), formative research (n=5, 0.71%), phenomenological research (n=10, 1.42%) are identified as qualitative research methods in addition to case study.
- 7) Qualitative research methods comprise 18.44% of research methods in examined literature.
- 8) The findings revealed that Ankara University, which has one of the highest number of thesis, showed little diversity in research method selection compared to other universities. Experimental and survey methods constitute 84.30% of all theses completed in this university.

Figure 4.13 shows distribution of secondary research topics. The most five popular sub-categories were presented, and the rest of them were shown as “Other secondary research topics”.

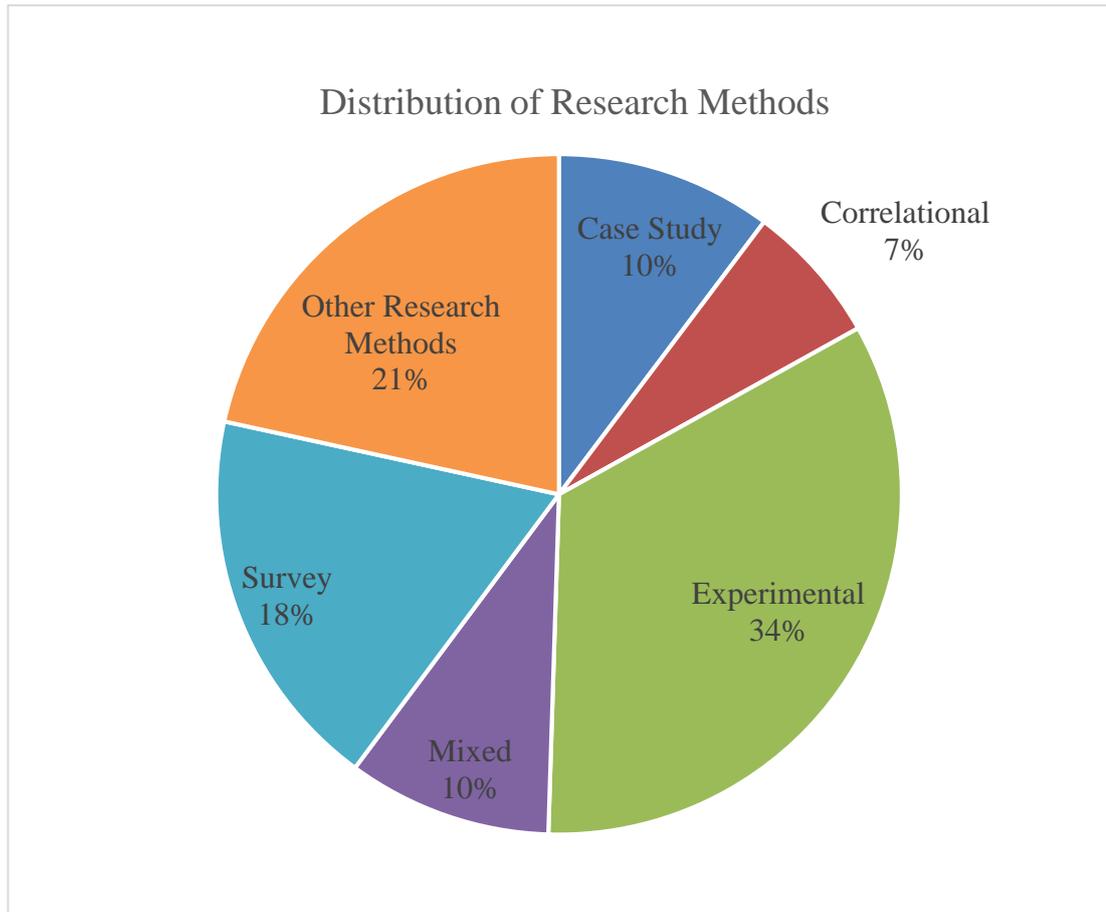


Figure 4.13 Distribution of main research topics

4.3 Findings of In-depth Interviews

The aim of this study is to investigate the factors that shape educational technology research practices from the perspective of faculty members with a specific focus on the motivational factors that influence research topic and method selection, their opinion on research topics and research methods dominating the field, and what they predict for the future of the field in Turkey. Hence, specific attention is paid to understand (a) the reasons why faculty members focus on what they have been studying, (b) faculty members' understanding of technology and how their technology perception shape research practices, (c) what faculty members think about dominance of quantitative research methods, and delivery media studies and technology integration studies in thesis in educational technology graduate programs in Turkey,

and (d) which research topics and methods come into prominence in the next five years.

The findings of in depth interviews are presented according to themes and sub-themes that have emerged during the analysis. Themes and sub-themes emerged in this study is presented below:

(a) Motivational Factors

- Professional background and personal interests
- Response to needs of society
- Economic factors

(b) Influence of the Way of Thinking about Research

- Response to emerging technologies: Think Again
- High receivability of technology focused research
- Legitimizing technology by the research

(c) Expectations – Towards a Better Educational Technology Research

- Socially responsible educational technology research
- Openness to new research paradigms

(d) Predictions for Future

4.3.1 Motivational Factors

This study aims to gain a concrete understanding of how educational technology research practices have been shaped in graduate programs of educational technology from the perspective of faculty members. Therefore, this section particularly focuses on motivational factors influencing research topic selection that were described by the informants of this study. The findings were presented according to sub-themes: professional background and personal interests, response to needs of society, economic factors.

4.3.1.1 Professional Background and Personal Interest

Faculty members in this study have different professional backgrounds and varying experiences in the field. In making decision about what to study, their previous

experiences have been highly influential. The informants stated that interdisciplinary nature of the field allowed them to integrate out of field experiences to educational technology research. In addition, the informants acknowledged that work experiences in different settings was one of the important factors that shaped how they define and approach educational technology problems, and therefore their research practices. For instance, a faculty member (Professor 6) with math background reported that,

As I have math background, I wanted to relate math with educational technology and I could find an area of research that combines both fields. I noticed that computer science has been used in our field, and math is the basis of computer science, so I made a connection and started to study in this area.

Similarly, another faculty member (Professor 2), who studied biology for two years and then switched to education major, stated that her experiences in biology contributed to his research in the field. She said,

...I have a book chapter on individual differences, in that chapter we discussed whether individual differences were genetically determined or environmentally determined. My biology background informed this study.

Professor 10, who has a long period of work experience in technical fields, noted that his work experience directly influenced his research agenda. Besides, his work experience has impacted on how he utilizes technology in his research practices. He stated that,

In terms of my background, I keep trying to follow technological developments, I studied electronics, math, and then computer engineering, and work experience in computer in a university. Of course I keep in my mind Clark's comment, I don't have expectation that they (technologies) will revolutionize education, but I think we can bring a new expansion to education, or do something new that might help people by means of new technologies.

The informants also stated that their educational backgrounds have been highly influential on shaping their research practices and understanding of the field.

Educational institutions where they got their Master's and doctoral degrees, and supervisors they study together have immensely contributed to how and what to study in the field. Supervisors and graduate courses were defined as important factors in shaping faculty members' research agenda. To illustrate, Professor 7 explained importance of educational background as follow;

...from my perspective what shapes your research line is how you were educated. To whom with you studied in Master's or doctoral education, or in which institution you studied, and the school followed in the institution define your research line. You are reflecting them... For example, where I got my PhD had an emphasis on instructional design... So you are educated with instructional design base... That is why I do not prefer application-oriented thesis, because they are against my ontology.

In line with Professor 7, another informant emphasized the influence of whom they studied with and where they studied, therefore, the influence of graduate courses. Professor 8 stated that he defined his research line in graduate courses, which led him to work on games and virtual worlds, and motivation. He commented;

...one day I was walking in department and I met with Dr. X, and he asked me join his research group... Because I had courses on 3D virtual worlds, and he got grant for developing a program, that's how I started studying on virtual worlds. I think that's a chance, being there... I keep working on this track.

Besides, educational background has also effect on how faculty members approach making publications. Informants stated that they transfer their publication habits to their professional life. For example, Professor-10 who has his doctoral degree from a research intense university expressed his motivation to make publication as below;

... during my PhD, I was in environment that encouraged us to make publication, everyone was asking each other "did you send any proposal to blah blah conference, let's do something", we have course projects and we'd

better send its results to somewhere. People were inciting each other. As my university was a research intense university, we were making small groups and come together with professors and work on publications.

Having teaching experience in K12 schools was indicated as an important factor that motivates and informs research. This first-hand experience helps researchers to get a better insight into real problems of classrooms and schools; therefore, they can suggest more realistic solutions. Professor 11 elaborated on this;

I was a teacher in a vocational high school... Our courses are mostly project based, mostly laboratory based. So you know the ways of actively engaging students in that environment... What do we mean by teaching? Engaging student into an instructional activity... What we should do is design activities that allow students to hands on experience... That is my research philosophy.

Moreover, informants with K12 teaching experience criticized faculty members in the field in terms of lacking teaching experiences in K12 schools. They argued that without having experience in schools, it is not possible to identify real life problems, and conduct research to inform real life problems. They also claimed that this situation creates gap between academy and practitioners. Professor 3 commented,

...I have five year-teaching experience in elementary school, so I know that world closely. I have first-hand experience that contributes me to know realities not only from the papers... When I meet colleagues with teaching experiences, we discussed that researchers lacking this teaching experience may claim non-realistic ideas. For example, in Fatih Project, it is said that in-service training would be given to teachers. But there are more than 750.000 teachers and distance education would be used to reach those teachers. Yeah, that may be true, but I have been there, things do not work in this way.

One other motivational factor affecting research topic selection mentioned by the informants was personal interest. Although personal interests' degree of importance

varied by the informants, they emphasized that doing research out of personal interests was almost impossible. Similarly, faculty members take their master's or doctoral students' personal interests into account when deciding on their thesis topic. This motivational factor also mentioned as an important one since it adds enjoyment to research activities. Professor 2 commented,

Education major was not my first preference, but now I am here, I was more interested in psychology or archeology. If I had had the opportunity to get a better guidance in high school, I wouldn't have chosen education major. So I touch on psychology in my research to enjoy what I do.

Like Professor 2, Professor 3 and Professor 8 also tried to select research topics in the scope of her personal interests that also gives enjoyment to her during her academic career. Professor 3 stated that she very much enjoyed a distance education experience in college, and kept working on this topic. Similarly, Professor 8 expressed that he used to be a computer gamer, and that's why he felt inclined to study on computer games in his career.

Faculty members also take the advantage of having Master's and doctoral students with different backgrounds, and different skill sets and interests. By this means, they can conduct studies combining educational technology and other fields such as geometry, physical education, or English language teaching. Besides, students' technical, programming, and design skills are considered as assets by their supervisors. For instance, Professor 6 stated that,

When deciding on a student's thesis topic, I consider his/her technical skills. If s/he is good at programming or have design skills, I choose a topic appropriate to those skills; otherwise, we choose one of traditional educational issues, a small-scale experimental study.

Professor 10 also drew attention to personal skills of graduate students' importance in deciding what to study with his students. He mentioned one of his doctoral students who has good interpersonal skills. He wanted this student to study on a topic that

requires interaction with people, and he said if he had asked another student of his to study on this, he/she wouldn't have coped with this task.

In addition, the informants stated that graduate students' interest can motivate them to study on different research topics. Most of the informants acknowledged that they encourage students to find a gap in literature by themselves, or identify a research problem. In line with this, Professor 7 mentioned that, even though he did not study on similar issues earlier, he had two graduate students, one of them motivated him to study on using technology for blind individuals, and the other student who has mentally disabled brother convinced him to study on mentally disabled individuals. Professor -10 indicated that one of his graduate students who previously worked on mobile technologies wanted to change her research orientation to critical theory since her earlier research topic was not satisfying her anymore. The professor well received her desire, since he believed that would be nice issue to study on. On the other hand, the informants noted that they can lead graduate students according to their personal interests, or what they have been reading, writing on that time period.

4.3.1.2 Response to Needs of Society

One of the most stated motivational factors by informants was the respond to the needs of society. To conduct research in order to solve educational problems by taking societal factors into consideration was indicated critical to fulfill responsibilities of educational technology research. For instance, two professors interviewed have been heavily working on distance education. The common motivation for both of them was the problems they observed in the society. Professor-5 stated that inequality of opportunity to access higher education is an issue in Turkey, and he believes that distance education is a viable solution to this problem. He also directed a large-scale distance education project that aims to prevent violence against women. Soldiers in compulsory military service were identified as target group of this project since they were one of the largest groups to be accessed in the society; therefore, training such a large number of individuals would benefit society.

Similarly, Professor-3 gives importance to studying on distance education since she believes that lifelong learning is crucial for everyone in the society in today's world and she recognizes the necessity of personal developments of individuals. For instance, she noted that she wants to learn something apart from her academic field, and sees MOOCs as a great learning opportunity for herself.

In the recent years Professor-4 has been studying on social media particularly focusing on cyber-bullying, child abuse, Internet threats, ethical issues, and copyright issues. He clarified that he is not very much interested in how to use social media in education, rather he aims to relate his social media research agenda to teacher education in the sense that teachers need to know their target population and how to cope with those aforementioned issues in their teaching practices. By doing research in this orientation, Professor-4 believes that his research may contribute to solving social problems.

In the same manner Professor -7 mentioned about the importance of considering social epistemology when deciding on research topics. He argues that a research without social epistemology would not have any impact in real life, and criticizes putting effort on research without considering social impact. He stated that,

I always consider social epistemology, if something has a social epistemology, and has a response in society, that makes sense... Now, we are reading thesis, researcher says "I did experimental study, I taught in that way, compared it with other group. The group I taught learnt better than the other group", and then it is put on the shelves, and remains there. If it has such an impact size, why they are not disseminated? Why it is not being used by everyone? Are we cheating ourselves or are we fabricating? If this is the science and these methods can teach English to Turkish people, and teaches very effectively, it should be used everywhere, at least it should be tried. OK, why it doesn't happen? Because it doesn't have social epistemology. They are all just done to write that thesis, it doesn't have a return or contribution to society. But what

will happen? That thesis will be three conference paper, two articles, a project from TUBITAK, and getting funding from XXX (a private ICT company).

Similarly, Professor -9 and Professor-10 advocated that researchers and graduate students should have concerns other than completing their thesis or making publications, and finding solutions to societal problems should be a driving point for them. Also the informants stated that research efforts that have only publication concerns, and neglect societal needs can be considered as a waste of time and money. Professor -7 commented on this,

We are, faculty members working in public universities, using public money, and this money comes from taxes. We have such a responsibility; we need to respond society's needs. If we were working in an R&D company, let's say, XXX (a local holding) hired us to research something. We have chance to spoil there because we are spending that company's money. But when spending public money, we need to link our research with society.

4.3.1.3 Economic Factors

One other theme emerged under the motivational factors is economic factors. The informants define economic factors as getting grant from national and international institutions. They noted that getting grant becomes important when they need to buy devices in purpose of their research. To illustrate, Professor -7 noted that he wants to study cognitive mapping, and in that study he needs an expensive device; however, as he could not get grant for that study he was not able to study that topic.

Professor -5 claimed that getting grant for projects is essential in a sense that projects urge people to come up with a product that might serve society's needs or solve a problem in a systematic manner. Therefore, he prefers to research issues that could be funded. Similarly, Professor- 8 and Professor -6 argue that, to get accepted for a project or grant requires lots of effort such as designing research in a systematic way which results in a proper study. Professor -1 also acknowledges the importance of getting grants that it allows hiring people with different qualifications, and work with team instead of working alone. Thus, she noted that she could conduct large scale studies.

This theme showed that the informants of this study value getting grants for their studies and they attempt to respond calls for grants.

On the other hand, Professor -2 and Professor -9 indicated that they do not define their research agenda based on calls for grants since they believe that applying for projects is a burden and requires too much paperwork. In addition, Professor -9 stated that getting grant for educational technology research without prioritizing a certain technology is really hard. Besides, Professor-11 noted that grant concerns limit researchers' perspective. He believes that researchers in the field feel obliged to fit their research agenda to Ministry of National Education's agenda. He critiqued that researchers run after the research agenda set by MoNE in order to get grants, since it rules the game.

4.3.2 Influence of the Way of Thinking about Technology

One of the purposes of this study is to uncover how the way of thinking about technology influence educational technology research. In that sense, two questions, "how faculty members respond to new technologies in their academic research" and "how their understanding of technology shaped their research" were posed to informants during the interviews. Therefore, this section mainly focuses on the influences of "technology" on educational technology research that were described by the informants. The findings presented according to sub-themes: Response to emerging technologies: Think Again, High receivability of technology focused research, and Legitimizing technology by the research.

4.3.2.1 Response to Emerging Technologies: Think Again!

One of the significant themes arising from the analysis of interviews was being precautious against emerging technologies before incorporating them into academic research. Majority of the informants emphasized the importance of thinking meticulously about the "technology" in terms of its attributes and affordances, and the reasons why we need that technology when studying on that technology and integrating them into any educational or learning environment. Professor-2 pointed out that,

I approach very cautiously to emerging technologies; I don't want to be a technophile; I don't have a feeling like "Aha! That's a new technology, let's jump into this", but I always try to keep abreast of new technologies...

Similarly, Professor-4 stated that before researching on an emerging technology, the first step to be taken should be recognizing and thinking over it, and then consider it as a research issue. He explained his approach to emerging technologies by giving example of his experience in Facebook,

I did not use Facebook immediately in my research or courses, but I enrolled the system and tried to get to know how it works and what is going on there... I have some colleagues; at the first times they underestimated Facebook and found it very childish, a space where people just waste time. I suggested them to create an account and try to understand what it is. We should know what we're dealing with, otherwise we cannot make any judgments on it... I did research on Facebook after I got to know the system and recognized the problems.

Informants of this study also critiqued that most of the researchers in the field of educational technology are very inclined to study on new technologies just because they are popular or hot issues, and by this means they can easily publish their work and get grants. However, the informants evaluate this position as a problematic issue, and consider it as one of the perennial problems of the field in general. Professor -7 elaborated,

Technology is totally shaping our research, let me give you an example. We have a critique on 20th century classrooms, they are the products of industrial revolution. No one has hesitation on this. Why? They are producing, and classrooms were designed in line with production logic... We are now talking about 21st century skills, cooperative learning is important, collaborative learning is important. OK, who is dominant sector in 21st century? IT sector. What should be the people's skill that will use products of IT sector?... Dominant sector is shaping!... Look XXX (a local GSM operator in Turkey)

giving scholarship... and saying that get my product and promote it in schools... its theses are written immediately. Google puts Google Glass on market, and people are writing thesis snap out of it ...!

He further articulated that researchers do not take lessons from the past in terms of applying new technologies in educational setting. He voiced his critique,

... when we think about well-known Clark-Kozma debate, everyone says Clark is right, not media but method teaches. Hmmm where is the fund? At media!... Sector is totally shaping the field. Research agenda, it is just what is produced new (technology) and how we can apply it to classroom. But in readings we are teaching that following this approach was stupid in 40s, 50s, or 60s. Isn't that become the same stupidity when we do it in 2015. The same stupidity! Nothing will come out of this.

Similarly, Professor-11 noted that he is not content with the enthusiasm of researchers to jump into new technologies given the fact that the field has several fundamental issues. He stated that,

...A new technology emerges, and every one jumps onto it, they try to write something on it, actually there are people to publish them. I don't think this is a true approach, we still have several fundamental issues. We haven't been able to relate technology and achievement yet... Flipped learning... There are more than 50 papers in a conference about it... People are jumping onto it, because it is a fashion!

Emphasizing the importance of attributes of emerging technology, Professor-6 stated that,

Emerging technologies do not motivate me a lot unless they make a big difference. For example, let's talk about tablet PCs. Their only difference from the PCs is having smaller size and touch screen. So, from this perspective, tablet PCs and PCs are not so different from each other. Design principles may

be updated accordingly but I don't see it as a big deal. Or I think using smart phones in education is not a very very big advancement... I think we need to be cautious in immediately integrating emerging technologies into education or doing research on them...

Professor-3 highlighted the affordances of emerging technology as an important factor in using those technologies for educational purposes and doing research on them. She commented,

... Of course I like trying new technologies, we're expected to know those technologies but do I have to integrate them into my courses? We consume certain things fast. I think it's good to monitor that technology at first. Because purchasing that technology is a burden to us. After a while technology becomes obsolete, just like our mobile phones, we don't use all attributes of our mobile phone and throw them away quickly... Instead of investing on a new technology, we can use the ones that everybody can easily access and make accessible technologies attractive and efficient.

On the other hand, Professor-1 stated that she gets the new technologies that can be integrated to technologies that she has already been using, and she also wonders how a newer version of a technology could make a difference. She thinks trying and researching on new technologies enriches her research agenda; by this means, she can also contribute to literature.

4.3.2.2 High Receptability of Technology Focused Research

One other significant theme emerged in this study is higher acceptability of technology focused research in educational technology literature. Especially, some of the informants agree that if a research study features a "technology", particularly new ones, it can be easily published and take place in the literature. Professor-2 pointed out that:

Certainly every new technology takes place in literature and we see a lot of research on those technologies.

Her statement includes a critique to higher acceptability of that kind of studies in the literature, and she also noted that researchers should be careful about traps in neo-capital system and marketing of those technologies to education system. She thinks that introduction of new technologies such as tablet PCs or other mobile devices to education is just like a fashion, and this happens with its influence of market, media, and ambition of decision-makers. She further clarified that researchers sometimes follow this fashion without thinking at length, and come up with research studies claiming that technologies worked great; however, she recommends that academicians should have a critical approach to new technologies in research practices.

Accordingly, Professor-10 stated that it is easier to publish or to get a grant from TUBITAK or EU when studying on new technologies; thus he keeps discovering emerging technologies.

In addition, informants were asked to comment on what they think about the dominance of delivery system studies and technology integration studies in Master's and doctoral theses that were completed in educational technology graduate programs in Turkey. A majority of the informants believe that the reason behind this trend is the expectations of juries to see research on this track so that studies can be easily accepted. Professor – 4 elaborated on this,

...Expectations are like this, the reason is this kind of studies can be easily accepted, easily approved by juries. That is very important because you do something "correct" even if you don't contribute to science. I think that is an important factor...

Besides, the informants also commented on possible reasons behind the dominance of delivery system and technology integration studies in theses. According to informants, these research topics are relatively straightforward and easy to handle. They also think former thesis studies become a reference to latter thesis studies; therefore, chiefly because of easiness and tendency to study on similar issues, studying on the particular topics becomes a tradition in the field. Professor – 5 commented on this,

I can say this (abundance of delivery system and technology integration studies in the field) is because we do what we see from each other. One more thing, in universities certain professors study on certain issues; when their students get degrees, they start working in probably other universities and keep working on similar issues, namely, they take that tradition with themselves. I think this is a culture.

Similarly, Professor-6 stated that,

Every thesis study becomes a reference to the next ones, it has always been in this way and it always will be. I think this is one of the most important reasons.

Relatedly, Professor -5 also pointed out that following this tradition would not contribute to the development of the field. He commented,

As long as this tradition is retained, people will keep doing same thing. I know this will be a big statement, but there is no perspective here (referring to following the same research traditions). What I see missing here is, researcher should think over what s/he is researching, and ask those questions to herself/himself: why I will study on this topic and to whom I will contribute.

Professor -9 expressed her dissatisfaction with this tradition, and argued that CEIT departments are considered equal to “integration studies”. She commented,

It is (technology integration studies) the most practical one! You don't have to do anything, just take it and check whether it worked or not...I can understand the technology integration studies in early years... but now we are in 2015...

On the other hand, Professor -7 argued that delivery system studies have been promoted since the established scholars in the field come from educational psychology background. Therefore, this has been a tradition as a result of experimental or factorial design tradition in the top universities. He further articulated that technology integration studies have inflated because it is very simple to conduct these kind of

studies, and it also stems from limited research method repertoire of faculty members. He commented;

... because you are using a scale or questionnaire, you don't have to control any variable. Probably you will use structural equation model, you know it is a regression, and it is easy to interpret findings... I also think faculty members' research method knowledge is not enough to supervise thesis in another way. Let me give you an example. Suppose that our research would be; there is no curriculum for elementary school kids but we would get them into computer labs two hours in a week and they would learn by themselves, and you say let's do a case study. If I tell you to use cognitive ethnography instead of case study, only two or three faculty members would understand what cognitive ethnography is. This is our problem... We have certain methods that everyone uses, and the researchers stick to that methods since they feel safe there. We need diversity in research methods to produce knowledge... Take a risk!

4.3.2.3 Legitimizing Technology by Research

Legitimizing technology by research emerged as one of the most stated theme by the informants. The common concern that informants share was educational technology research, intentionally or unintentionally, becomes an advocator of legitimizing technology. They believe that there must be a line between to become adapted to emerging technologies and to become advocator of introducing those technologies to educational or learning settings. Professor -6 stated that,

... For example, with the rapid developments in technology, 3D printers or programmable toys become popular, and there are lots of large-scale projects abroad emphasizing the importance of using those technologies. They are also getting popular in our field. Should we prioritize them? Well, I am hesitant; we need to think over it. There must be a line between using and exploring them and becoming the market of that technology unconsciously. Recently we're (educational technology departments) becoming the markets of technology.

Similarly, Professor -2 also pointed out that,

If we are charmed by new technologies like someone outside and say “Wow! That’s awesome! And let’s use it”, this may be wrong. Actually there are lots of educational technology research saying that this technology solved all the problems, increased motivation of kids etc. OK, but is it really sustainable? As professionals we need to be precautionary against this kind of statements. If we’re charmed by those technologies and lead to put them in education, this will have no transformative effect... We shouldn’t get stuck in marketing traps.

One other concern stated by the informants was to prioritize technology itself rather than educational problems. In this case, research efforts become a means to marketing of technologies in education. Professor -5 noted that,

For example, please take a look at studies on digital literacy. They all say, technological devices are insufficient, they must be widespread and there must be trainings on them, or technology must be widespread, Facebook should be used etc. I am interested in educational problems; Facebook is none of my business unless it solves any educational problem. I am not an agent of technology companies. I cannot say: “You should use technology!” I ask why I need to use that technology, what problems can be solved by using that technology. I consider them... Or let’s talk about digital literacy, meetings are organized to make digital literacy widespread, but what in reality it means is how we can increase the selling of those technologies. Who wins? Companies!

Expressing his displeasure with studies on social media, Professor – 5 also stated that,

Actually I am irritated with the abundance of social media studies and most of those studies legitimizing the use of social media in education. Those studies are imposing us to necessity to use them. I am asking why we need to use that technology; I do not have concerns to legitimize any technology.

Relatedly, Professor -7 argued that researchers and instructors promote the use of companies' software in the classroom as 21st century skills. He advised to be skeptical about how we present and disseminate companies' products in educational setting.

4.3.3 Expectations: Towards a Better Educational Technology Research

One of the purposes of this study is to reveal what faculty members think about dominance of quantitative research methods, and delivery media studies and technology integration studies in supervised thesis in educational technology graduate programs in Turkey. Therefore, this section describes informants' critiques and opinions on most frequently studied research topics and mostly used research method in thesis.

4.3.3.1 Socially Responsible Educational Technology Research

One of the factors that motivate faculty members in selecting a research topic was identified as response to the needs of society. In line with this, one other significant theme emerged as result of analysis was a need for socially responsible educational technology research. Aforementioned, most of the informants stated that they were motivated to solve educational technology research problems by considering societal factors. Furthermore, they pointed out that dynamics in society needs more attention of researchers studying in the field of educational technology in the sense that the rapid technological developments also influence individuals and society.

Professor -2 highlighted the importance of considering in what ways a new technology may affect individuals and how it creates a culture, in the scope of educational technology research. In line with this statement, Professor -4 pointed out that social media studies need to consider not only why and how to use them for educational purposes but also pay attention to cyber-bullying, threats in that environment, and child abuse. Similarly, Professor -3 noted that it is difficult to keep children away from social media; therefore, the researchers in the field of educational technology should pay attention to how to protect children from unintended effects of Internet and social media.

In addition, Professor -9 noted that it is important for researchers to be sensitive to real-life problems, and design research to respond authentic problems. She reported that;

Every researcher should have concerns about finding solution to societal problems other than just completing Master's or doctoral thesis.

She further argued that researchers should derive their research problems not only from the literature but also they should consider the local context in which they are studying. She exemplifies that in 2005 constructivist learning is integrated to Turkish curriculum, and in 2006 the scales measuring to what extent constructivist learning paradigm is employed emerged. She criticized that those scales were standardized in a context in which constructivist learning paradigm is barely used. She stated that the problem here is we are producing research problems only from the literature, but do not consider needs of local context. Therefore, the research efforts fail to respond real life problems of our country.

Besides, two of the informants indicated that educational technology research should also focus on informal learning in addition to studying learning in formal contexts. As CEIT departments are a part of Faculty of Education, Professor-10 argued that researchers limit their studies to K12 settings. However, he noted that from starting birth-to-death-learning is everywhere, not only in school settings. Accordingly, he commented;

One of my biggest critique to field is that we limit our studies with K12... We need to extend our studies to any place where learning occurs, even in garbage man's education.

Relatedly, Professor -3 pointed out that educational technology research can contribute to everyday life of people; for example, gamification can be used to change behaviors so that it can be used for preventing obesity which is a problem of many people in today's world or fighting against smoking. She expressed that everything touches our social lives may become a research issue of the field.

Additionally, Professor-2 and Professor -8 acknowledged the necessity of large-scale research that could inform policy. They mentioned that current research studies fail to inform policy since they are chiefly conducted in small settings. Moreover, Professor-10 claimed that in the implication section of theses, authors write suggestions for policy makers; however, none of the policy makers read theses and get those suggestions. Setting from this point, he recommends that researchers should think about how their studies could inform policy.

The informants also stated that educational technology have an important potential to touch disabled individuals' lives comparing to healthy ones. Four of them noted that experiences in the field showed that educational technology does not contribute to normal individuals to a great extent, however, educational technology might find valuable solutions to blind, deaf individuals or mentally disabled individuals. For that purpose, they recommend educational technology researchers to target special education.

4.3.3.2 Openness to New Research Paradigms

The informants of this study were asked to comment on prevalence of quantitative research methods in theses and dissertations completed in educational technology graduate programs in Turkey. Majority of them think that quantitative research methods are preferred chiefly because of the influence of positivism and that because the quantitative research methods are easier to conduct compared to qualitative studies and they can easily get accepted for publication or considered as safe-side by Master's or doctoral students and their supervisors.

Due to the influence of positivism, quantitative research methods considered as more scientific than qualitative research methods. Professor -2 and Professor -5 noted that as long as researchers can present their findings in numbers and show their analyses, it is assumed that the study becomes more scientific; this misleading idea steered research practices. Accordingly, Professor -6 and Professor -11 pointed out that professors particularly coming from positivist tradition still expect to see quantitative

methods in Master's and doctoral dissertation; otherwise, they do not consider studies as scientific. Professor -6 also commented,

Frankly speaking, old generation professors in our field still expect to see quantitative methods very apparently, and, of course they participate in thesis committees. To meet their expectations and pass the thesis defense with ease, students and their supervisors prefer quantitative methods. This is my observation... In terms of science, unfortunately we are not open to innovations so we keep using "traditional" experimental methods.

Accordingly, Professor -11 reported that,

We have some faculty members in our department who believes that quasi-experimental method is the only research method. They think there must be a pre-test, post-test, and control group in a study. But we know there are other research methods, there are single subject studies or single group studies. They do not recognize them... For example, design based research is one of them. Because they only know certain methods.

It is indicated that academic journals still promote quantitative studies. Professor – 5 pointed out that adherence to quantitative methods increased the number of publications since they get easily published. Similarly, Professor -6 explained that referees rejected most of his manuscripts since they did not include at least an experimental part; and commented,

The system forces me to add at least a small experimental part to my studies; otherwise, referees want me to add experimental part and I do it compulsorily. When they see the results of experiments they feel comfortable.

In addition, Professor -9 mentioned about statistic fetishism of SSCI journals in the field. She pointed out that some SSCI journals have such criteria that if someone uses advanced statistics, it will get published otherwise the study will not even be considered for review. Therefore, this approach forces researchers to define their

research agenda according to desired statistical analyses. She commented on the effect of statistic fetishism on researchers;

If a researcher chooses the appropriate statistical analysis for his/her research problem, and it is t-test, then what is wrong with that? Of course nothing. But I am asking the researcher that why s/he changed his/her sub-research question, and s/he answers that “sub-research question was not appropriate to Chi-Square as it was, that’s why I changed it”. We should stop that statistic fetishism... It only yields artificial designs and artificial results, and they do not contribute to us.

All of the informants stated that one of the most important factors behind researchers to prefer quantitative methods is that these methods are easier to conduct, since steps in data collection, data analysis, and representing findings are clearly defined and require less time and less effort. Professor -5 stated that,

Conducting quantitative research is straightforward because methods are clear... When look at the conference papers, journal articles, in most of them we see that a researcher found a scale of someone else and administered that scale to most convenient group. I don’t think this study may enrich the literature.

Professor -2 indicated that qualitative research methods require more expertise and novice researchers need more apprenticeship to learn and use them comparing to quantitative research methods. However, she stated that, professors are also less experienced in qualitative research methods to provide apprenticeship to their students. As mentioned earlier, the informants of this study acknowledged that faculty members’ limited research method repertoire cause graduate students’ to adhere to same research methods. One other challenge to conduct qualitative research is described as language, Professor -3 stated that she mostly writes her academic papers in Turkish, and she needs translation to publish them in indexed journals. She believes that the translation may cause loss in meaning, and she considers publishing in English is a challenge when conducting qualitative research. Even though the informants of this study

acknowledge that qualitative research is demanding, thus it is not preferred by researchers, Professor-7 brings another perspective to this issue. He argues that as graduate students resist to learn statistics, they tend to choose qualitative research methods. He further reported that,

I do not understand resistance to learn statistic. I am always asking students what they would do when they become professors, how they would evaluate their students' research, I really wonder this. Can you say "I don't know ANOVA, so I cannot evaluate such a study?" And the way of producing knowledge is a concern. There are lots ways to know, and quantitative is one of them. It is nonsense to resist learning it.

Furthermore, all of the informants emphasized that educational technology research should embrace new research paradigms, and should be open to new research methods in order to contribute to the development of field. They stated that especially in the recent years the number of qualitative studies has been increased; however, they believe that qualitative studies especially ethnography, action research, phenomenology should take more place in the literature and need to be promoted. Professor -6 commented,

I see mixed method studies as a transition period, in the near future, I believe that qualitative studies with small groups – but data collected deeply and researcher intensely engaged in the process – will be easily accepted and we'll see more qualitative studies.

Professor -8 emphasized that in addition to qualitative research, large-scale descriptive studies should be promoted in educational technology research so as to inform policy. He argues that large-scale studies have great potential to provide data to convince and inform policy makers.

On the other hand, mixed method research has been seen as a safe-side by the informants of this study. Three of the informants stated that researchers prefer employing mixed method research in a sense that it has both quantitative and

qualitative parts, therefore, it would be easy to convince jury members in committees. Professor -9 criticized,

... for example mixed method, it is the best and has the least risk since it has qualitative part, quantitative part, or descriptive, or experimental, or anything might be included in it. That's the safest method, and that's why we choose it. I am not sure how good is that...

4.3.4 Predictions for Future

The informants of this study were asked to make comment about what would be the prominent research issues or research methods in near future. In terms of research topics to be emphasized in the near future, they believe that current trends will continue and do not expect researchers to be open to new research topics. Professor -8 expressed that he has no hope for the future of the field and stated that,

I think researchers will keep studying on attitude because it is easy to study. Academicians do not give up on this easily. We should say young researchers that "unless you do proper studies, you will not be able to get your tenure", otherwise this trend will never change.

Similarly, Professor -10 believes that current trends will not change in the context of Turkey. From his perspective, major research topics of educational technology will remain the same, and researchers will keep working on technology integration, media comparison, teacher attitude, and scale or questionnaire development studies given that they have clear cut ways to conduct such kind of studies. He notes that discovering new perspectives is a demanding work and researchers are not inclined to bother themselves. Professor-9 shares the similar ideas with Professor-10, and she expects that educational technology research topics will not change in near future in a sense that researchers prefer easy ways to conduct research and make publications.

Professor-1 stated that she cannot envision what might be the prominent research topics of the field, because she thinks that the policies to be put in effect will eventually influence what educational technology researchers study. To clarify, she contends that

nationwide policies or policies regarding education system are not based on sustainable grounds; therefore, things might change quickly and researchers will respond to those changes.

The informants of this study were also asked to comment about what they will be studying in near future in order to envision research topics of the field. Educational neuroscience has already received attention of three of the informants since they believed that educational neuroscience might have enlighten many issues on learning and instruction. Four of the informants reported that they have been focusing on using educational technology for disabled individuals and have been collaborating with researchers and practitioners in special education, and will keep studying on this area. Two of the informants stated that they have educational games and gamification in their research agenda. Adaptive learning environments is also addressed by one informant. One of the informants who has interest in studying social media expressed that his research direction in near future will be ethical use of social media, cyberbullying, and hate speeches from the parent's perspective. STEM or STEAM is the research topic that draws attention of two informants. Moreover, wearable technologies and their use in the service of learning is another research topic stated by two informants.

To conclude, the findings showed that current trend in educational technology research could remain the same both in research methods and research topics. The reason why change in trends is not expected is due to researchers' resistance to be open to new research paradigms and discover new areas to study. As for research topics that could be emphasized in the near future are reported as educational neuroscience, educational games and gamification, STEM or STEAM, adaptive learning environments, wearable technologies, and educational technology for special education.

4.3.5 Summary of In-depth Interview Findings

The second purpose of the current study is to uncover the factors that shape educational technology research practices from the perspective of faculty members, and understand predictions about which research topics and methods come into

prominence in the next five years. Themes and sub-themes emerged in the analysis of in depth- interview is as below;

(a) Motivational Factors

- Professional background and personal interests

The interdisciplinary nature of the field allowed the informants to incorporate their out of field experiences to educational technology research. It is reported that educational backgrounds have been highly influential on shaping research practices. Supervisors and graduate courses that they took during graduate education were defined as important factors in shaping their research agenda. It is also reported that having experience in K12 schools help the informants to understand real problems of school settings. It is also argued that without that experience, it is hard to identify problems regarding school settings. Working with graduate students, the informants take their skills and personal interests into account.

- Response to needs of society

The informants of this study reported that responding societal needs motivate them when choosing research topics. It is also considered as an important responsibility of the field. They also stated that educational technology researchers should have concerns to respond societal needs.

- Economic factors

Getting grant is defined as an important factor that motivates the informants particularly when they need to buy devices for their research. Grants also provide them to opportunity to hire people with different skill sets. One important finding is that it is hard to get grants for educational technology research unless they prioritize a certain technology. It is also stated that grant concerns could limit researchers' perspective.

(b) Influence of the Way of Thinking about Research

- Response to emerging technologies: Think Again

An important finding is that being skeptical about emerging technologies before incorporating them into academic research. The informants' emphasized the ask thinking about why we need that technology. The informants critiqued researchers' desire to study on new technologies only because they are popular. They also critiqued that publications on new technologies could be easily accepted. Taking lessons from the history of the field is recommended by the informants.

- High receivability of technology focused research

It is stated that if a research study features a “technology”, particularly new ones, it can be easily published and take place in the literature. The reason of the dominance of delivery system studies is attributed to high receivability of technology focused research, and juries' expectations to see studies in this track. It is also argued that delivery system studies have been promoted since the established scholars in the field come from educational psychology background. Therefore, this has been a tradition as a result of experimental or factorial design tradition in the top universities.

- Legitimizing technology by the research

The common concern that informants share was educational technology research, intentionally or unintentionally, becomes an advocator of legitimizing technology. They believe that there must be a line between to become adapted to emerging technologies and to become advocator of introducing those technologies to educational or learning settings.

(c) Expectations – Towards a Better Educational Technology Research

- Socially responsible educational technology research

It is pointed out that dynamics in society needs more attention of researchers studying in the field of educational technology in the sense that the rapid technological developments also influence individuals and society. Having a social epistemology is reported as an important issue in educational technology research.

- Openness to new research paradigms

It is stated that due to influence of positivism, quantitative methods are most preferred in educational technology research. The informants also stated that quantitative methods can be easily accepted for publication compared to qualitative methods. The dominance of quantitative methods adhered to juries' expectation to see those research designs in theses and dissertations. Another reason stated by the informants is that due to limited research methods repertoire of faculty members. The informants acknowledged the necessity of being open to new research paradigms.

(d) Predictions for Future

- a. It is expected that current research trends of educational technology will almost remain the same in terms of both research methods and research topics.
- b. It is argued that educational technology research could be influenced by educational policies to be put in effect.
- c. It is expected that following research topics will be emphasized in the near future: educational neuroscience, educational technology for special education and disabled individuals, games and gamification, STEM or STEAM, and wearable technologies.

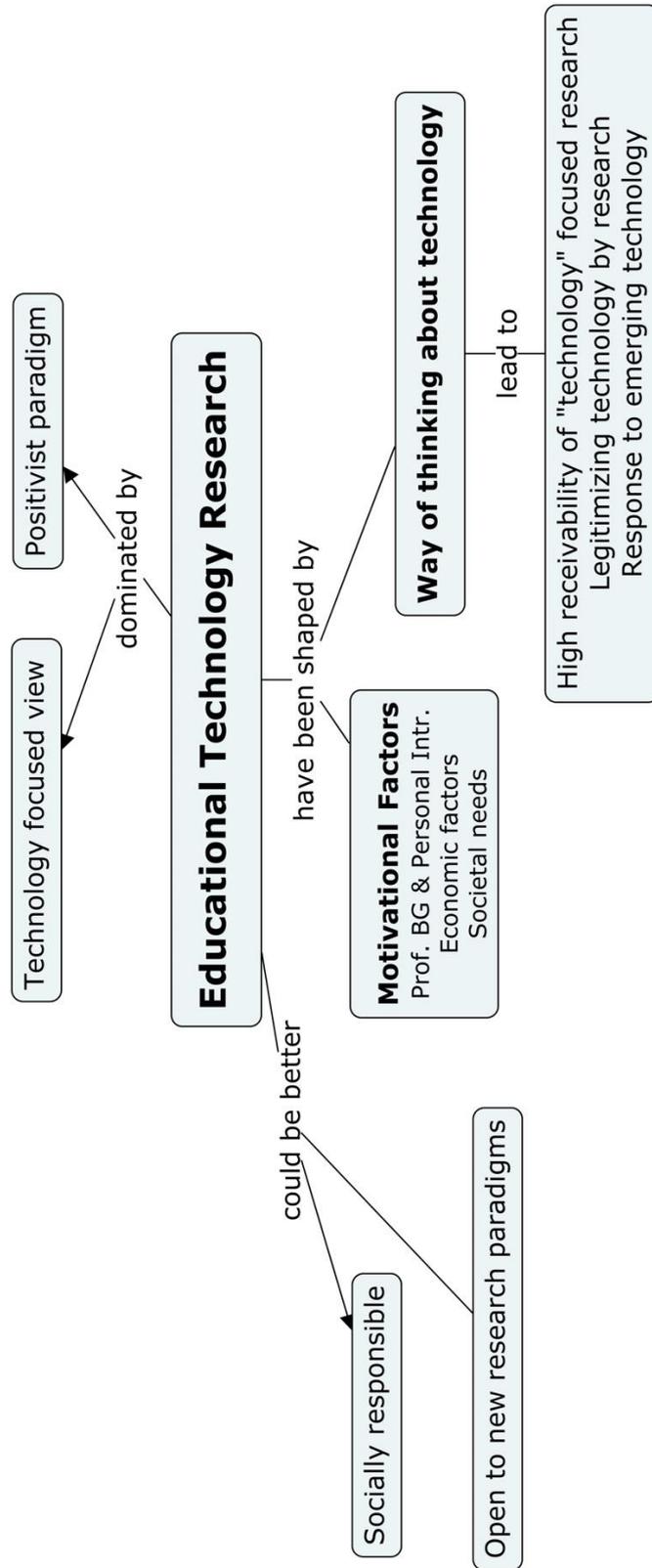
4.3.5.1 Themes and Sub-themes Emerged in In-depth Interview Analysis

Themes	Sub-themes	Codes
Motivational Factors	Prof Background & Personal Interest	Faculty members' educational BG
		Graduate students' educational BG
		Faculty members' personal interest
		Graduate students' personal interest
		Importance of having K12 experience

	Response to needs of society	Importance of having “social epistemology”
		Focusing social aspects of technology
		Desire to solving problems in society
		Importance of graduate students’ sensitivity social problems
	Economic factors	Need to buy devices
		Hiring people
		Projects’ effect on systematic study
		Responding call for grants
		Burden of getting grants
		Difficulty of getting grant without prioritizing a “technology”
Influence of the way of thinking about technology	Response to emerging technologies	To be precautious against new technologies
		Critique to jump into new technologies
		Affordance & Attributes of technology
		Enriching research agenda by new technologies
		Publication easiness of technology focused research
	High receivability of technology focused research	Getting grant by technology focused studies
		Scholars’ expectation to see TFR
		Easiness of technology integration and delivery media studies

		Following the tradition
		Problematic issues of TFR
	Legitimizing technology by research	Being advocator of a certain technology
		Problems of prioritizing tech in research
Importance of being skeptical		
Expectations: Towards a better Educational Technology research	Socially responsible Educational Technology research	Considering dynamics in society
		Technology's effects
		Sensitive to real life problems
		Focusing on informal learning
		Contributing everyday lives
		Importance of large scale studies
		ET for disabled individuals
	Openness to new research paradigm	Influence of positivism on the field
		Academic journals' effect on research method
		Easiness of conducting quantitative research

4.4 Synthesis of the Findings



CHAPTER V

DISCUSSION AND CONCLUSION

5.1 Introduction

Selecting Critical Theory as an analytical lens, this study addresses the current Educational Technology trends in graduate programs of Educational Technology in Turkey, and reveals the possible factors that drive research trends. The purpose of this study stands mainly to uncover the factors that shape the field of Educational Technology in graduate programs; hence, provide a ground for discussion of current state-of-art and future of the field in Turkey. This chapter provides discussion for findings of current study, implication for research and practice, and offers recommendation for further research studies, and finalizes with conclusions.

5.2 Summary of the Study

The purpose of this study was to explore current research trends in the context of graduate programs in the field of Educational Technology in Turkey, and to reveal the possible factors that influence these research trends from the perspective of faculty members affiliated to Educational Technology graduate programs. Secondly, current study aimed to understand faculty members' expectations of the future of the field and their suggestions on how to make our field better than as it is today. To achieve the purpose of this study, all theses and dissertations completed in Educational Technology graduate programs until 2016 were analyzed by employing content analysis technique, and 705 theses and dissertations were examined in the scope of this study. Findings of content analysis informed the second phase in which 11 faculty

members affiliated to Educational Technology graduate programs were interviewed so as to uncover the factors that might have influenced the trends. They were also asked to comment about what they expect for future research trends in the field. The in-depth interview data were analyzed based on open and selective coding proposed by Corbin and Strauss (2015). Current study is informed by Critical Theory; therefore, it attempts to uncover silenced issues in the examined literature besides signified research topics and methods. Unfolding the reasons behind dominance of certain research methods and research topics is another goal of this study. The findings of this study is also discussed through the analytical lens of Critical Theory.

5.3 Discussion of the Findings

The discussion of the findings in this chapter is presented around research questions of the study. This section begins with a discussion of research topics and research methods trends in theses and dissertations completed in Educational Technology graduate programs. It continues with the possible factors that influence these trends from the perspective of faculty members. Then the findings regarding to research topic trends and the possible factors that influence these trends from the perspective of faculty members are discussed. Finally, findings about faculty members' opinion on the trends and their predictions for the future of the field in Turkey are discussed.

5.3.1 Research Topics Trends in Theses

The current study aimed to explore which research topics have been prioritized and which of them have been silenced in the examined theses completed in educational technology graduate programs in Turkey. The findings of this study revealed that “learning environments” category (n=228, 32.34%), have been identified as the most popular among the main research topic categories. However, the interests in “learning environment” has decreased over the years in general. This main research topic category consists of four sub-categories including “design/development of learning environments/instructional materials”, “delivery method of training/instruction”, “effectiveness of learning environment”, and “communication (interactions in technology based environments, discussions)”.

Among those sub-categories “delivery method of training/instruction” (n=279, 21.69%) was traced as the most preferred research topic. Despite the decreasing trend in “learning environment” category, this sub-category has followed a steadily increasing trend in terms of its percentage. This finding is supported by other studies. Uğur-Erdoğan (2007) stated that most of the studies focused on “delivery systems media formats”, and, similarly Akça-Üstündağ (2009) reported that “computer aided instruction”, which is categorized in “delivery method of training/instruction” in the scope of the current study, was the most popular research topic (43.61%).

In addition, this finding is consistent with Masood (2004)’s trend analysis study. She found that “delivery systems or media formats” was identified as top ranked research topic. However, she reported that there was a decrease in the number of this research topic, while the findings of the current study indicate an increasing trend. This difference could be explained as follow: Masood (2004) analyzed articles published in ETR&D and Tech Trends. These journals receive publications from very diverse authors. However, examined theses and dissertations in this study were supervised by a relatively small group of academics. The courses that graduate student take during their education are mostly designed by those academics; therefore, we could argue that graduate students’ perspectives are influenced by their professors’ view. Besides, graduate students could tend to study on these topics since they have been already accepted as research topics worth studying. In other words, graduate students might stay at the safe side rather than challenging the tradition that has already been well received.

When the informants of this study were asked to comment about the dominance of “delivery method of training/instruction” in graduate programs of educational technology in Turkey, they argued that theses’ and dissertations’ committee members still expect to see research on this track. In addition, the dominance of “delivery method of training/instruction” could be adhered to long tradition of the field which promotes studies in this track. In other words, the interest in delivery methods of instruction/ training could be due to the field’s concerns about application of media for facilitating learning and instruction.

The findings of this study showed that the second most preferred main research topic category is “emerging technologies, acceptance of emerging technologies” (n=117, 16.59%). This main research category consists of three sub-categories including “new technologies”, “technology acceptance models, enablers, and barriers”, and “teacher / instructor / administrator factors”. This main research topic category has shown a steadily increasing trend. In addition, “new technology” (n=82, 6.38%) sub-category has also received the attention of researchers and has shown an increasing trend. This finding is consistent with literature. To illustrate, a content analysis study, which examined trends in theses published in CEIT departments, conducted by Kurt, İzmirli and Karakoyun (2009) also found that the most popular subject areas are online learning / distance education and technology. Furthermore, this finding is supported by the argument that educational technology researchers have been highly inclined to focus on how to incorporate new digital technologies into education in an attempt to improve learning with high expectations (Bigum, Bulfin, & Johnson, 2015; Pollard & Pollard, 2004; Cuban, 1986; Postman, 1996; and Muffoletto, 2001).

Besides, the informants of this study were asked to comment about the findings of the current study abovementioned; in other words, abundance of theses on delivery method of training / instruction, emerging technologies, and technology acceptance. The findings indicated that researchers are inclined to study on new technologies since they are very popular. The “high receivability of technology focused research” theme that emerged in the second phase of this study shows that if a research study features a “technology” particularly new ones, it is well received by the publication outlets.

One important finding of the current study is that “social / cultural / political issues” (n=24, 3.40%) and “the field” (n=13, 1.84%) main research categories have received less attention of the researchers. Selwyn and Facer (2013) discussed that due to the dominance of learning science over the field, even studies on sociocultural and social-constructivist theories of learning are driven by restricted view of technology; therefore, studies on the politics, the economics, the cultures, and the ethics are relatively limited. Similarly, Bigum and Rowan (2015) claimed that the focus of the

studies is chiefly on how best to improve teaching and learning by means of digital technologies.

When we critically examine the field's history both in Turkey and in general, it is possible to come up with many projects and attempts to use technology in education that have unfulfilled promises despite big investments and very optimistic expectations. For instance, microcomputers excited researchers and policy makers in 1980s both in Turkey and in the world. Cuban (1986) and Boody (2001) reported that microcomputers did not revolutionize the education as it was expected. Similarly, Sahinkayasi (2008), Usun (2004), and Pedersen& Turkmen (2005) expressed that this movement was far from meeting expectations due to shortcomings in teacher education and lack of necessary alignment in the curriculum. The lessons learned from the past experiences in the field show us that Educational Technology researchers should widen their perspectives instead of playing around "how to best improve teaching and learning" or "what works" or "it is there and available" argument when using any technology for education. In that sense, asking "why we need to use this technology" question could be considered as a critical step to prevent new failure stories.

5.3.2 Research Methods Trends in Theses

The findings of this study showed that quantitative research methods particularly experimental methods still dominate the research in the graduate programs of Educational Technology in Turkey. Experimental methods constitute 33.61% of research methods within the analyzed theses, although a decrease in its trend has been observed in 2011-2015 time period. In addition to experimental methods, other quantitative research methods including survey method (n=129, 18.29%), correlational research (n=45, 6.38%), descriptive studies (n=39, 5.5.53%), causal comparative methods (n=7, 0.99%), and meta-analysis (n=4, 0.56%) highly dominated educational technology research practices. Even though popularity of those research methods fluctuate over years, the results indicate that 65.53% of all research methods employed in analyzed theses is quantitative research methods.

The similar findings were obtained in studies that examine educational technology research trends in Turkey. Akca-Ustundag (2009) analyzed Master's theses written in CEIT Master's programs between 2002-2007, and found that 82.71% of these used one of the quantitative methods. Ugur-Erdogmus (2007) conducted a content analysis study of theses and dissertations completed in educational technology graduate programs in Turkey, and her results indicated majority of the research methods used in theses and dissertations were quantitative research methods.

The studies examining SSCI journal articles addressed in Turkey in the field of educational technology revealed similar results. Göktaş et.al. (2012) reported that quantitative research methods comprise 53.4% of all studies which were published in SSCI journals and addressed in Turkey. Another study that examined research trends in articles published from Turkey in SSCI journals in educational technology field found that experimental research methods comprise 36.20% of all studies (Sert, 2010). Kılıç-Çakmak et. al. (2013) also analyzed articles published in six SSCI journals in the field of educational technology in year 2011, and revealed that most frequently used research method was quantitative methods.

Furthermore, studies in international literature supports the findings of current research. Masood (2004) analyzed articles published in Tech Trends and ETR&D, and found that experimental methods was the top research method in ETR&D, and it was the same in Tech Trends. Hew, Kale, and Kim (2007) reported that descriptive methods were the most popular research method among the studies published in ETR&D from 2000 through 2004. The hegemony of quantitative research methods in the field was an expected outcome in a sense that aforementioned content analysis studies reported similar findings. It is seen that using quantitative research methods became a tradition in the field, and it is not easy to change the traditions in the short term.

The results of this study also revealed that there is an increase in the number of studies employing qualitative research methods despite the dominance of quantitative research methods in general. Case study is addressed as the most popular qualitative research

method (n=72, 10.21%). Including case study, qualitative research methods comprise 18.44% of research methods in examined literature. This finding is supported by other content analysis studies. Masood (2004) found out that case studies one of common research methods in ETR&D articles (34%), and Tech Trend articles (24%). Similarly, Akça-Üstündağ (2009), Uğur-Erdoğmuş (2007), and Göktaş et.al. (2012) reported that an increase in the number of qualitative research design has been observed. The reason behind this trend could be adhered to influence of constructivist paradigm on the field of educational technology. Duffy and Jonassen (1992) stated that constructivism brings an alternative epistemological base to objectivism. Jonassen, Cernusca and Ionas (2002) acknowledged that constructivist worldview's assumptions comply with qualitative research.

These findings indicate that positivism has an ongoing effect on educational technology research practices. The recognition of the field of educational technology as a distinct field mainly based on the tenets of psychology (Seattler, 1990); hence, psychology was assumed as natural foundation of the field and instructional design was recognized as “applied educational psychology” (Gur & Wiley, 2009). As a result of being based on psychology, the field of educational technology also adopted the way of producing knowledge of psychology. Justification for using educational technology has been based on empirical studies; mostly experimental and correlational methods (Webb, nd). Therefore, due to the influence of positivism on the research and the high frequency and continuity of quantitative research methods over years in educational technology research practices could be explained with the literature that the field mostly associated with positivist epistemology in general.

In-depth interview findings support the argument that educational technology has been highly influenced by positivist paradigm. As noted by the informants of this study, tendency to prefer quantitative research designs in educational technology research is chiefly because of positivist paradigm, and expectations of established scholars with positivist background to see quantitative studies in theses and dissertations. They point out that there is a common belief among educational technology researchers that quantitative research methods seem more scientific. The power coming from top to

down – from established scholars to graduate students – could be considered as one factor that highly influences research method trend in the field.

The other reason behind dominance of quantitative methods in educational technology research is addressed as top journals of the field's, such as ETR&D or Computers & Education, orientation towards positivist paradigm by the informants of the current study. This finding is supported by the trend analysis studies conducted by Kılıç-Çakmak et. al (2013) and Masood (2004). The informants of the current study argue that academic journals still promote quantitative methods particularly experimental methods. It is even stated that the journals have desire to see advance statistical analyses in articles to be published. This finding is consistent with a recent study conducted by Revees and Oh (2017). They evaluated articles published in ETR&D to determine how methods used evolved in a 25-year time period. Their results showed that articles used quantitative methods comprises 41% of all methods in published articles. Accordingly; we might conclude that critical actors such as supervisors of graduate students, leading journals in the field, academicians working in the field and their perceptions regarding what constitute quality research, and their resistance to alternative ways of knowing could be interpreted as a visible exercise of power over novice researchers in a sense that the critical actors have power to set the rules of the game.

One important finding of the current study is that selection of research design varies by university. Ankara University is traced as an interesting case where 121 master's and PhD theses were completed, and which has one of the highest number of theses. Results show that only two research methods, experimental designs (n=67, 55.37%) and survey design (n=35, 28.93%), were prioritized in Ankara University. In total 84.30% of all theses completed in Ankara University used either of these quantitative methods, whereas diversity in research designs were observed in other universities. In this case, the percentage of quantitative methods exceeds the other percentages reported in other trend studies. Setting from this point it might be argued that by means of the agency of this institution and its academics, the positivist tradition could keep impacting educational technology literature in Turkey.

When we compare Ankara University and METU, as they have the same number of theses and dissertations in total, METU shows diversity in terms research methods employed in theses and dissertations. Even though experimental method was the most dominant research method in most of the universities, there were only 7 experimental studies conducted at METU. This could be explained by faculty members' background. METU mostly employs faculty members who got PhD degrees from abroad, especially from the USA universities, whereas in Ankara University, there is a trend of inbreeding which may result in continuation of the tradition with quantitative research methods.

During the years in which behaviorism and cognitivism have been leading epistemologies in the field, it might be expected to see the influence of positivist epistemology on the research practices. Although constructivism, whose worldview is in alignment with qualitative research methods, has been steering epistemology in the last two decades, it is surprising that quantitative research methods constitute the majority of the research methods in the literature of educational technology both in Turkey and in other countries.

The results of this study revealed that mixed method research is one of common research designs among the studied theses (n=68, 9.65%), and showed a continuously increasing trend. It could be argued that mixed method research has gained the attention of researchers in local and international literature (Revees & Oh, 2017; Uğur-İrdoğmuş, 2007; Akça-Üstündağ, 2009; Göktaş et. al. 2012). The informants of this study argued that mixed method designs are usually preferred by researchers given that it includes both qualitative and quantitative parts. Researchers consider this kind of designs as a safe-side since it has potential to satisfy the expectations of academic community. Setting from this point, we can conclude that mixed method designs could keep gaining attention of researchers.

A rise in number of qualitative studies particularly in the last decade has been seen in this study. While case study has relatively long tradition in the examined theses, other qualitative research methods including action research, design based/developmental

research, phenomenological research, and formative research have been mostly used in 2011 -2015 time period. However, Caffarella (1999) traced an increase in the number of dissertations employing qualitative research methods and noted that qualitative designs constitute a substantial amount of the dissertations. When his study and the current research is compared, it could be argued that even though the former study was conducted almost twenty years earlier than the latter one, it is interesting that his findings revealed more frequent use of qualitative research methods in the theses he examined. Setting from this point, we might conclude that educational technology research in the context of Turkey follow trends behind in terms of research methods. The reason why Turkey felt behind this trend in USA could be explained as follows: as Hylka (2003) discussed that prevailing discourse in educational technology is US oriented, in other words, they lead the field. Hence, educational technology researchers in other settings follow the line drawn from their US oriented colleagues.

The informants of current study acknowledged that educational technology research should embrace alternative ways of knowing, and be open to embrace new research paradigms. The point here is not to open a space for discussing qualitative – quantitative dilemma or discussing superiority of a method over the other one; rather, as Koetting (2004) proposed, to encourage researchers to think over “why do we research?” or “what are we searching for?” (Truth? Knowledge? Information? Understanding? Explanation? Emancipation?). Based on the answers to proposed questions, modes of inquiry will alter. To illustrate, positivist paradigm is interested in technical control, interpretivist paradigm is interested in understanding, a critical paradigm is interested in emancipation (Koetting, 2004). The content analysis findings of this study revealed that research designs in line with positivist and interpretivist paradigm exist in the examined theses; however, the results yielded virtual absence of research in line with critical paradigm. None of the above mentioned trend studies in the context of Turkey reported existence of critical research. Similarly, one of the most recent trend study conducted by Revees and Oh (2017) reported that there were no papers published in ETR&D in 25 - year period with critical or postmodern goals, and

concluded that this finding could be attributed to insufficient coverage of critical perspectives in the curriculum of educational technology doctoral programs. This argument could be legitimately applied to Turkey case.

While the researcher and Revees & Oh (2017) acknowledge and emphasize the absence of critical perspectives in educational technology research, Maddux and Cumming (2004) propose a counter argument. They discuss that in educational research and in educational technology research in particular, there exist a trend which threatens to quality of research. What they argue is diverse philosophies, theories or movements such as phenomenology, critical theory, naturalism, feminism and constructivism could erode the quality of research in a sense that extremist proponents of them reject the traditional research paradigms. They further claim that the problem is not with the qualitative research methods themselves; rather, the problem stems from the ones who sees them as a panacea. It is essential to note that the researcher of the current study does not take an extremist position that rejects traditional research paradigms, rather she recognizes the value and contribution of research designs in line with traditional epistemology. She argues that diversity in research designs have potential to address practical and social issues, and open up new ways to produce knowledge. Moreover, the researcher recognizes the value of emancipation and reflective practices questioning how things could be better that are informed by critical perspectives in educational technology research.

5.3.3 Uncovering the Possible Reasons behind the Trends

One purpose of the current study is to uncover the possible factors that have been influential on the way knowledge is produced in educational technology research in the context of graduate programs in Turkey. In the first phase of the study, the researcher attempted to reveal silenced or underrepresented issues; in other words, attempt to notice what is unnoticed in the field apart from which research issues have been most studied. The point here is, as Bigum and Rowan (2015) contended that when any research study identifies certain research topics or issues as the most important, and conveys this message (what they see important) to others with similar interests;

this might result in others to follow the same tradition, and ignoring what is unnoticed in the field. Setting from this point, they further argue that any field of research characterized by assertions, either implicitly or explicitly, should be continuously examined in order to see the “blind spots”. Therefore, the current study is an attempt to see the “blind spots” of educational technology research, and uncover the possible factors led to overrepresentation of certain research issues while others have been underrepresented.

In the scope of this study, in-depth interviews were conducted with educational technology faculty members to grasp their perspectives on “why those trends occur?” in the examined theses. The findings of this part are discussed through the lenses of critical theory. It is difficult to explain what critical theory is exactly due to different perspectives on it, changing and evolving nature. In brief, critical theory analyzes power relations between groups and individuals within a society, identifies who benefits and who loses, and challenges “taken for granted” assumptions (Kincheloe & McLaren, 2000). They further noted that the central argument of critical theory is that all knowledge is historical and broadly political in nature; thus, knowledge is shaped by human interests of different kinds, and it cannot be detached from these interests. McLean (2006) underlines that critical theory does not aim to produce definitive knowledge, rather it constructs arguments which should always be kept open. In line with this, the current research study aims to provide a ground for discussing current-state-of-art of the field, and to raise a critical awareness among the professionals of the field.

The findings of this study pointed out that faculty members’ research topic selection is driven by their professional background and personal interests of themselves and their graduate students. In terms of professional background, one important finding is having experience in K12 schools helps researcher to comprehend the real problems of the schools, and allow them to conduct research that have potential to inform practice. Similarly, Burkhardt and Schoenfeld (2003) argued that educational research in general does not directly inform practice even though it provides useful information. They suggest that research could be more useful if its structure and organization were

better linked to practice. We might suggest that engaging in schools provide opportunity to the educational technology researchers in terms of understanding how to empower students and teachers.

It is explored that faculty members shape their research agenda in accordance with their students' personal interests and skill sets. This finding is important in terms of understanding one of the ways of educational technology research is produced. At this point, we can mention about power relations. From Foucault's perspective, power determines the particular forms of knowledge through discourse; thus, it does not simply repress, it produces. Moreover, power is not a possession of one group of people, but it is a relationship between individuals; and what counts as knowledge depends on social relations (Foucault, 1983; & Foucault, 1980). This finding shows that power exercises in a productive way in the process of producing knowledge of the field. Therefore, we might conclude that graduate students from different backgrounds and with different skill sets may contribute to development of the field.

On the other hand, another finding of this study revealed instances of repressive forms of power relations. As Foucault (1980, 1983) noted that power is omnipresent at every level of social body, and where there is power, there is resistance. He argued that what counts as knowledge always depends on the social relations. One instance of repressive form of power relations, is explained as follow: The findings of current study revealed that dominancy of research designs in line with positivist paradigm, and dominancy of studies on delivery method of training / instruction and emerging technologies mainly stem from expectations of established scholars in the field, and leading journals. To illustrate, "high receivability of technology focused research" theme emerged in this study tells that leading journals in the field promote studies those focus on a "technology", and established scholars also have desire to see that kind of research studies. In addition, dominancy of quantitative research designs is linked to expectations of the same actors by the informants of this study. Therefore, from the perspective of the informants of the current study, it seems that long standing tradition of the field could remain the same. Here it is possible to raise this question: "So, what might be wrong with this tradition?".

An extensive body of literature emphasize the failure of technologies which were used with optimism and high expectations, to fulfill their promises in education (Reiser, 2007; Cuban, 1986; Boody, 2001; Selwyn, 2002; Muffoletto, 2001; and Broomly & Apple, 1998). It is further argued that educational technology professionals both researchers and practitioners have been enthusiastic to adapt new technologies; hence, new technologies have been a leading force in the field (Gagne, 1986; Noble, 1996; Friesen, 2008; Lee & Winzenried, 2009). To illustrate, Hew et. al. (2007) and Masood (2004) pointed out that educational technology research topics change as new technologies emerge due to the common belief that technology's capabilities and power to transform education. Similarly, the findings of the current study reveal that from the perspective of faculty members, educational technology researchers are very inclined to study on new technologies just because they are popular, and studies on new technologies easily get published. As Price and Maushak (2000) noted that "publish or perish" has become a cliché in the academic world, and promotions depend on the quantity of the publications in most of the institutions. Sarewitz (2016) discussed in his column in Nature News that the pressure to publish more reduces the quality of the academic work. He further argued that the case is worse in policy-driven fields such as education. In the field of Educational Technology, as the findings of this research study and the other trend analysis studies cited in the current study pointed out that the researchers follow the "fashionable technology trends". At this point, it would be critical to question in which ways the scholars could better contribute to the field and respond to the needs of society instead of following the fashions that would become fads soon.

One important finding of this study is the problem of legitimizing technology by research; intentionally or unintentionally educational technology research becomes an advocator of new technologies. Hence, the findings show it is important that educational technology researchers need to be skeptical when they are responding new technologies, they need to question "why" to use it. Accordingly, Selwyn (2012) propose that researchers need to be aware of the risk of promoting technology as a technical fix of social problems. It is important for researchers to contemplate about

“who benefits?, who loses?, and whose interests are served” when setting their research agendas. Hsu et. al. (2013) noted that new technological developments have been grasping attention of researchers; however, it needs to be kept in mind that in most cases technology developers exercise their technical power when they determine or create needs for end users in terms of releasing new technologies. Therefore, they suggest researchers to be aware of this situation.

In addition, a growing body of literature written from critical perspectives argue that the field of educational technology has been steered by instrumental / technological rationality which is more interested in method and most efficient or cost effective means to reach a specific end that purpose, and delimits questions to “how to” instead of “why should” (Selwyn, 2105b; Postman, 1986; Noble, 1996; Muffoletto, 2001; Apple, and Bigum, Bulfin, & Johnson, 2015). Thus, as Broomly (1995) stated technology is considered as inherently good for society, and education. As a result of instrumental / technological rationality the academic research often fails to address adequately the social, political, economic, cultural complexities of technology and education (Selwyn, 2015b). Hope (2015) discussed that researchers in the field often optimistically seeks ways to promote best practice and what works in a narrow and instrumental way. Likewise, Selwyn (2002) argued that researchers tend to ignore the dynamics of advanced industrial society in shaping the development and implantation of technology since they also ignore that educational technology is shaped by economic and political concerns. In line with general trend in the field, the results of the content analysis indicated that in graduate programs of educational technology in Turkey; social / cultural / political issues have not been extensively covered.

This study provides suggestions for a better educational technology in light of its findings. Firstly, the findings show that if educational technology researchers be open to new research paradigms instead of adhering to certain methods, they could benefit from alternative ways of knowing. As mentioned earlier, epistemological diversity might be helpful to address practical and social issues. Similarly, Siegel (2006) argued that researcher should be familiar with other ways of knowing and diverse epistemological perspectives. The author concluded that openness to new voices and

approaches should be welcomed and encouraged by education researchers and incorporated into education for future researchers (p.10). This study also suggest that educational technology research needs large-scale survey studies could be helpful to inform policy. Selwyn (2002) stated that small or medium scale survey studies could be easily traced in the literature; however, educational technology research lacks large-scale studies. To inform policy, this kind of studies could be beneficial. Secondly, this study suggests that educational technology research should be sensitive to societal needs. Educational technology research should ask wider questions rather than delimiting its questions to “how to” and “what to”. As Oliver (2014) argued that researchers should go beyond asking “what works”.

5.4 Implications of the Study

Critical theory is used as the theoretical framework of the current study in order to explore what research issues have been silenced in the examined theses. Critical theory has potential to open up ways to uncover why inadequately studied issues have gained less attention. Critical perspectives encourage researchers to ask “why” questions, challenge the statue-quo, and go beyond “what” and “how” questions. Future studies could use critical theory as a theoretical framework for investigation in the field of educational technology. In the literature review chapter, the gap for critical research has been presented and discussed. Especially investigating issues regarding how knowledge is produced could be studied within the framework of critical theory. The constructs derived from critical theory such as resistance, agency, and how power exercises could inform further educational technology research studies.

With the most current and comprehensive findings, this study provides a big picture of the field in Turkey context. It highlighted silenced issues in the examined theses in addition to signified research topics and research methods. This study has implications for the following groups:

Educational Technology Graduate Students: The current study’s findings can benefit graduate students in terms of getting insight into what issues need more attention and how those issues can be studied in order to take the field of educational technology

further in Turkey. This study suggests noticing silenced issues could help improving educational technology research. Foundational, social, cultural, and political issues need more attention according to the findings. The findings of this study shows what might be the future research issues in the field from the perspectives of faculty members. This finding may help graduate students to shape their research agenda. This study also suggests graduate students to being open to alternative ways of knowing by enriching their method repertoire. Lastly, when deciding on a research topic, contemplating why to study this topic might be helpful for them to reflect on their practices.

Educational Technology Scholars: The aim of scholarly work is to contribute to knowledge base of the field in which scholars study and supervise graduate students. Setting a ground for a discussion about how the field can be better than as it is today. This study has also methodological significance since it employs critical research method into educational technology research. It might raise awareness of using alternative research methods. This study also suggest that educational technology graduate programs could cover critical perspectives.

Policy Makers: The findings of this study could inform policy makers about which issues need to be emphasized in the field. They make take actions for encouraging and supporting researchers to study on the issues that have received less attention. This study revealed the importance of integrating critical perspectives in educational technology research. Policy makers could benefit from this study in a sense that it provides suggestions for a better educational technology research.

Educational Technology Practitioners: This study could encourage practitioners to question their existing practices, and think about how they can better serve for their target groups. Practitioners, particularly instructors and teachers could be skeptical about adopting novel technologies in learning settings. As Salomon and Almong (1998) argued using technologies solely depending on the “it is there and available” argument would end up with disappointment. Overall this study suggests being skeptical about technology.

5.5 Recommendation for Further Studies

In this study Master's and PhD theses were examined by means of content analysis technique in an attempt to provide a comprehensive picture of educational technology field's current state in the context of graduate programs in Turkey. Extending this research into different contexts in which educational technology research takes place, and the institutions which makes policies affecting educational technology research practices, additional focused studies would deepen the understanding of how knowledge is produced in the field of educational technology.

In this study in-depth interviewing technique is used in an attempt to uncover the possible factors that have been influential on the trends of educational technology from the perspective of faculty members. This research gives place to voices from the academy. Understanding different actors' perspectives on state-of-art of the field of educational technology would deepen understanding of how educational technology knowledge is produced, and how it could go one step further. Therefore, this study could be followed up with journal editors, policy makers, and graduate students in the field of educational technology. Building on the results of this study, future studies could frame critical theory in order to deepen their understanding of technology, and the way knowledge is produced.

5.6 Conclusion

This research study was conducted to explore current educational technology research trends in graduate programs of educational technology, and uncover the reasons that have been influential on shaping the trends from the perspective of faculty members affiliated to educational technology graduate programs, understand faculty members' expectations for the near future of the field in Turkey. This study complied with the elements of critical research, and questioned the dominancy of positivist paradigm and technology focused research in the field, attempted reveal silenced issues of the field, uncover the reasons behind aforementioned dominancy. Therefore, this study could be considered as an example of framing critical theory, and employing critical research in educational technology research.

The critique of the current state of educational technology research in terms of hegemony of deterministic approaches, and their influence on the way knowledge has been produced in the field is presented in the dissertation. Briefly, over the many years, the field has been critiqued for failing to fulfill its promise starting from the 1920s; to exemplify, Edison's claim that envisioned educational films would revolutionize the way people learn never came true, and it is possible to see other failure studies in the scholarly literature of educational technology (Cuban, 1991; Selwyn, 2013; Seattler, 1990; and Hylnka, 2003).

Setting from this point, it is necessary to question and unfold the reasons behind the failure patterns in the field in spite of huge investments in the technology in schools and research efforts. In that sense, the way scholars perceive and understand technology can be considered as an important factor that could influence their research practices. This study has shown that “technology” has been a leading force in shaping educational technology research rather than being a driving force. As Facer and Sandford (2010) argued technological determinism highly influence educational visions promoted by policy makers, industry, and researchers. It seems that as long as critical actors such as established scholars, policy makers and prominent journals in the field resist to embrace new research methods and insist on promoting technology focused research, the researchers in the field will probably fail to see the “blind spots” of Educational Technology and will keep following the similar research traditions. If we are to take lessons from the history of the field in which many failure stories accumulated, we need to challenge ourselves as researchers in the field and start to ask wider questions instead of delimiting ourselves to “what works” or how it works” approach. This study concludes that, educational technology research is currently dominated by positivist paradigm and technology focused research studies, have been shaped by way of thinking about technology and motivations of the researchers, and could be better by being open to new research paradigms and by being socially responsible.

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APPENDIX A

A.1. Turkish Version of Interview Schedule and Informed Consent Form

Bu çalışma ODTÜ Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü doktora öğrencisi Ayşe Gül KARA tarafından Yrd. Doç. Dr. Gülfidan CAN danışmanlığında doktora tez çalışması olarak yürütülmektedir. Çalışmanın amacı, Türkiye’de eğitim teknolojileri alanında araştırma eğilimlerini etkileyen faktörleri araştırmaktır. Bu amaca yönelik olarak sizinle yaklaşık 1 saat sürecek bir mülakat yapılacaktır ve sizin onay vermeniz durumunda görüşme bir ses kayıt cihazı ile kaydedilecektir. Cevaplarınız gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir; elde edilecek bilgiler doktora tezinde ve bilimsel yayımlarda kullanılacaktır. Çalışmanın hiçbir aşamasında kimlik belirleyici bilgiler kullanılmayacaktır.

Çalışmaya katılım tamamen gönüllülük esasına dayanmaktadır. Görüşme genel olarak kişisel rahatsızlık verecek sorular içermemektedir. Ancak görüşme esnasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz görüşmeyi istediğiniz zaman bırakabilirsiniz.

Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Bu çalışmayla ilgili daha fazla bilgi almak isterseniz ODTÜ Bilgisayar ve Öğretim Teknolojileri Eğitimi bölümü doktora öğrencisi Ayşe Gül KARA (agkara@gmail.com, aysegul@metu.edu.tr; 0312 210 75 23) ya da aynı bölüm öğretim üyesi Yrd. Doç. Dr. Gülfidan CAN (gcan@metu.edu.tr, 0312 210 7521) ile iletişime geçebilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum. (Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

İsim Soyad

Tarih

İmza

----/----/-----

1. Önceki arařtırmalarınızdan bahsedebilir misiniz? Genel hatlarıyla hangi konular üzerinde çalıştınız? Kısaca arařtırma çizginizden bahsedebilir misiniz?
 - Bahsettiğiniz konuyu/konuları çalışmanızda en çok neler etkili oldu?
2. Yeni çıkan teknolojiler (eđitim teknolojileri alanında çalışan) bir akademisyen olarak çalışma konularınızı seçmede etkili olur mu? Olursa nasıl?
 - a. Akademik çalışmalarınızda teknolojiyi nasıl yorumlarsınız?
 - b. Teknolojiyi algılama ve yorumlama şekliniz arařtırmalarınızı nasıl şekillendirmiştir? Buna birkaç örnek verebilir misiniz?
3. Akademik çalışma konusu seçerken, bir arařtırma projesine başvururken ařađıda sayacađım dinamiklerin hangisi ya da hangileri sizin için daha belirleyici olur? Bu süreçlerde ne gibi beklentileriniz veya kaygılarınız olur? (Evet ya da Hayır, Evetse nasıl olduğunu açıklayabilir misiniz?)
 - a. Konunun güncel bir sorun olması?
 - b. Ekonomik getirisi olması?
 - c. Yayınlanmasının kolay olması?
 - d. Projelendirilebilir olması?
 - e. Bireysel ilgiler?
 - f. Sizin eklemek istedikleriniz?

4. Master veya doktora öğrencileriniz tez konularının seçiminde nasıl bir yol izlersiniz? Onlara herhangi bir yönlendirmede bulunur musunuz?
 - a. Öğrenciler konularını sizce nasıl belirliyorlar, sizce bu yöntem doğru işliyor mu, nasıl iyileştirilebilir?
5. Eğitim teknolojileri alanında kullanılan yöntemler hakkında ne düşünüyorsunuz? (Tezin en önemli bulguları katılımcıya sunulur).
 - a. Türkiye’de tamamlanmış master ve doktora tezlerinde daha çok nicel araştırma metotları kullanıldığı bilinmektedir, bu konu hakkında ne düşünüyorsunuz? (Tezimin Bugüne kadar alanda yapılan çalışmaları göz önüne aldığımızda sizce hangi araştırma metotlarının sınırlı ölçüde kullanıldığını düşünüyorsunuz?
6. Size göre, bugüne kadar alanda yapılan çalışmaları göz önüne aldığımızda hangi konular sınırlı ölçüde veya hiç araştırılmamıştır? (Tezin en önemli bulguları katılımcıya sunulur).
 - a. Sizin eğitim teknolojileri alanında artık çalışılma vakti geldi dediğiniz konular var mı?
 - b. Eğitim teknolojileri alanında Türkiye’de tamamlanmış master ve doktora tezlerinde daha çok ortam karşılaştırması ve teknoloji entegrasyonu konusunda çalışmalar yapıldığı bilinmektedir, bu konu hakkında ne düşünüyorsunuz?
7. Önümüzdeki beş yıl içinde eğitim teknolojileri alanında ne gibi yeni araştırma alanları olacağını öngörüyorsunuz?
 - a. Hangi konular ön plana çıkabilir?
 - b. Hangi yöntemler ön plana çıkabilir?
 - c. Sizin araştırma yöneliminizde hangi çalışmalar var?

Bu alıřmaya katıldığınız için ok teřekkür ederim, sizin eklemek istediğiniz herhangi bir řey var mı?

APPENDIX B

B.1. English Version of Interview Schedule and Informed Consent Form

This doctoral thesis study is being conducted by Ayşe Gül KARA (PhD candidate) under the supervision of Assist. Prof. Dr. Gülfidan CAN at Computer Education and Instructional Technology Department of Middle East Technical University. This study aims to investigate the factors that influence research trends in theses and dissertations in the field of Educational Technology in Turkey. In line with this purpose, an interview will be done, and it is expected to last approximately one hour. In case you give permission, this interview will be audio recorded. Your answers will be kept confidential and evaluated by the researchers. The obtained data will be used for this dissertation and scientific publications.

Participation to this study is voluntary. This interview do not include disturbing questions. However, you can stop interview whenever you feel uncomfortable for any reason.

Thank you for participating in this study. For further information, you can contact with Ayşe Gül KARA (agkara@gmail.com, aysegul@metu.edu.tr; 0312 210 75 23), PhD candidate at the Department of Computer Education and Instructional Technology in Middle East Technical University or Assist. Prof. Dr. Gülfidan CAN (gcan@metu.edu.tr, 0312 210 7521) from the same department

I agree to participate in this study and I know I can withdraw whenever I want. I accept that the information I provide will be used for scientific purposes. (Please sign this form, and return it to the researcher).

Name Surname

Date

Signature

----/----/----

1. Could you talk about your previous research studies? In general, what did you study? Could you talk about research line?
 - a. What were your motivations to study on those topics /issues?

2. As an Educational Technology researcher, are new technologies influential on deciding what to study?
 - a. How do you interpret technology in your academic studies?
 - b. How your understanding and interpretation of technology influenced your research studies? Could you give some examples?

3. Which of the following dynamics could be influential when you apply for a research project or deciding on a research study? Which of them are more determinant for you? (if yes, how?) What kind of concerns or expectations do you have in this process?
 - a. Being a hot issue / topic?
 - b. Provide economical benefits?
 - c. Being easy to publish?
 - d. Being easy to get grant?
 - e. Personal interests?
 - f. Any thing else you wish to add?

4. How do you proceed when your Master's or PhD students decide on their theses' topics or what to study for their theses? Do you give them any directions?
 - a. How do you Master's and PhD students select theses' topics? (based on the given answer) Do you think this is good method, or how it could be improved?

5. What do you think about research methods used in the field of Educational Technology?
 - a. In theses completed in Turkey in the field of Educational Technology, quantitative research methods were most preferred research methods. (The major findings of the current study are presented to the informant). From your perspective, which research methods have been used limitedly when you consider research studies in the field?

6. From your perspective, which research topics have been less studied or overlooked in the field?
 - a. Is there any research topic that you think it's time to study on that topic?

 - b. In theses completed in Turkey delivery method of training / instruction and technology integration studies are most preferred topics (The major findings of the study are presented to the informant). What do you think about this?

7. In the next five years, which new research issues or topics might emerge in the field of Educational technology?
 - a. Which research topics or issues could become prominent?
 - b. Which research methods could become prominent?
 - c. What do you have in your research agenda?

Thank you for participating in this study, would you like to add any thing else?

APPENDIX C

C.1. A Sample of Contact Summary Form

Contact Summary Form			
Place	<hr/>	On site visit	
Date of data received	<hr/>		
Today's date	<hr/>		Internet (Skype etc.)
1. What were the main issues or themes that struck you in this contact?			
2. Summarize the information you got (or failed to get) on each of target questions you had for this contact.			
Question	Information		
<hr/>	<hr/>		
<hr/>	<hr/>		
<hr/>	<hr/>		
<hr/>	<hr/>		
3. Anything else that struck you as salient, interesting, illuminating or important to this contact?			
4. What new (or remaining) target questions do you have in considering the next contact?			

APPENDIX D

D.1. The Approval from METU Applied Ethics Research Center

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER



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22.11.2014

Gönderilen : Y. Doç. Dr. Gülfidan CAN
Bilgisayar ve Öğretim Teknolojileri Eğitimi

Gönderen : Prof. Dr. Canan Sümer 
IAK Başkanı Vekili

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü öğrencisi Ayşe Gül Kara'nın "A Critical Analysis of Educational Technology Research Trends in Turkey" isimli araştırması "İnsan Araştırmaları Komitesi" tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı

Uygundur

22/11/2014


Prof. Dr. Canan Sümer
Uygulamalı Etik Araştırma Merkezi
(UEAM) Başkanı Vekili
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Sayı: 30/01/2015-21908

ÖĞRENCİ İŞLERİ DAİRE BAŞKANLIĞI
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MIDDLE EAST TECHNICAL UNIVERSITY

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P. 460 212 200 34 10
E. 460 212 200 34 10
A. 460 212 200 34 10

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23.01.2015

FIRAT ÜNİVERSİTESİ REKTÖRLÜĞÜNE

Üniversitemiz Bilgisayar ve Öğretim Teknolojileri Eğitimi Ana Bilim Dalı Doktora Programı öğrencisi Ayşe Gül Kuru'nun 10 Şubat 2015 - 01 Haziran 2015 tarihleri arasında "Türkiye'de Eğitim Teknolojileri Araştırma Eğilimlerinin Eleştirel Bir Analizi" başlıklı çalışmasına ilişkin hazırlanan anketi Fırat Üniversitesi'nde uygulama yapmak için, öğrencinin isteği doğrultusunda görevlendirilmesi Etik Komite onayı ile uygun görülmüştür.

Uygulamanın yapılabilmesi için gereğini arz ederim.

Saygılarımla.


Prof. Dr. M. Volkan Atalay
Rektör Yardımcısı

Ekler:

- 1- İAEK Başvuru Formu
- 2- İAEK Proje Bilgi Formu
- 3- Gönüllü Katılım Formu
- 4- Görüşme Soruları
- 5- İAEK Başvuru Kontrol Listesi
- 6- İAEK Değerlendirme Sonucu
- 7- Etik Komite Onay

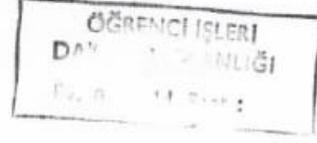
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T.C.
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Genel Sekreterlik

Sayı :11611387/044/
Konu :Anket İzni (Ayşe Gül KARA)



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ANKARA

İlgi :Orta Doğu Teknik Üniversitesi Rektörlüğü'nün, 23.01.2015 tarih ve 54850036-300-347-1025 sayılı yazısı.

Üniversiteniz Bilgisayar ve Öğretim Teknolojileri Eğitimi Anabilim Dalı Doktora Programı öğrencisi Ayşe Gül KARA'nın, "Türkiye'de Eğitim Teknolojileri Araştırma Eğilimlerinin Eleştirel Bir Analizi" başlıklı çalışmasıyla ilişkin hazırlanan anketi, 10 Şubat 2015-01 Haziran 2015 tarihleri arasında Üniversitemizde uygulamasına ilişkin izin talebiniz Rektörlüğümüz tarafından uygun bulunmuştur.

Bilgilerinize arz ederim.

e-İmzalıdır
Prof.Dr. Kutbeddin DEMİRDAĞ
Rektör

04-02-2015-1990

Evrakı Doğrulamak İçin : <https://ebys.firat.edu.tr/en/Vision/Dogrula/8V2P4P>

Firat Üniversitesi Rektörlüğü 23119 ELAZIĞ/TÜRKİYE Ayrıntılı bilgi için irtibat: Hülya Kaya
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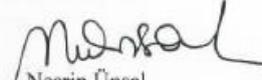
05.02.2015

EĞİTİM FAKÜLTESİ DEKANLIĞINA

Fırat Üniversitesi'nden alınan, Bilgisayar ve Öğretim Teknolojileri Eğitimi Ana Bilim Dalı Doktora Programı öğrencisi Ayşe Gül Kara'ya ait yazı ilgisi nedeni ile ilişikte sunulmuştur.

Bilgilerinize arz ederim.

Saygılarımla.

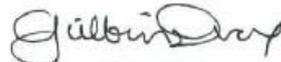

Nesrin Ünsal
Öğrenci İşleri Daire Başkanı

FEN BİLİMLERİ ENSTİTÜSÜ
YÖNETİM KURULU KARARI

Tarih : 15.01.2015
Sayı: FBE: 2015/ 8

GÖREVLENDİRME VE İZİN

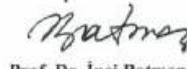
Bilgisayar ve Öğretim Teknolojileri Eğitimi EABD doktora programı öğrencisi Ayşe Gül Kara'nın 10 Şubat 2015-01 Haziran 2015 tarihleri arasında "Türkiye'de eğitim teknolojileri araştırma eğilimlerinin eleştirel bir analiz" başlıklı araştırmasına ilişkin hazırlanan anketi, ekli etik kurulu başvuru formunda belirtilen okullarında uygulama yapmak için görevlendirilme başvurusu incelenmiş; ilgili danışman görüşüne dayanarak adı geçen öğrencinin isteği doğrultusunda görevlendirilmesine oybirliği ile karar verilmiştir.


Prof. Dr. Gülbin Dural
FBE Müdürü


Prof. Dr. Gürsevil Turan
FBE Müd. Yard.


Doç. Dr. Sinan Gürel
FBE Müd. Yard.


Prof. Dr. Ayşen Savaş
Üye


Prof. Dr. İnci Batmaz
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Year	Place	Enrollment
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FOREIGN LANGUAGES

Advanced English

PUBLICATIONS

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