

AN ANALYSIS OF GRADUATE THESES ON TECHNOLOGY EDUCATION IN TÜRKİYE ACROSS VARIOUS VARIABLES

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Abstract

This study aims to examine graduate-level (master's and doctoral) theses on technology education produced in Türkiye between 1996 and 2025. The study population consists of 57 graduate theses obtained from the Council of Higher Education (CoHE) Thesis Center. In the study, the document review method was employed to evaluate the graduate theses, and a thesis analysis form prepared by the researcher was used as the data collection tool. In this form, the theses were analyzed according to types, years, universities, institutes, advisor titles, countries studied, and research designs. The findings obtained from the analysis were presented and interpreted using frequency and percentage tables. The results of the study indicate that certain universities, particularly Gazi University, stand out in the preparation of graduate-level theses on technology education in Türkiye. The fact that 10 doctoral-level theses were completed compared to 47 master's-level theses further underscores the importance of this study. In this context, the conclusion section of the study includes discussions and recommendations regarding theses on technology education.

Key words: Doctoral, Master's, Technology education, Thesis,

Introduction

The global advancement of technology has made technology education a necessity. In this context, governments have restructured their education systems, curricula, and teaching principles and methods. Technological knowledge and skills relevant to daily life have been incorporated into all levels of education, from preschool to higher education (Dagdilelis et al., 2005). This is because equipping individuals living in technological environments with the necessary skills is closely linked to the development of a society possessing the qualities required by that environment and to the shaping of its way of life. Consequently, technology education aims to help students identify their interests and talents and discover their own careers, while also broadening the perspective of working individuals on life and simplifying their daily lives (Izciler et al., 2004). Thus, individuals who undergo this education acquire the skills to generate solutions to various problems they encounter, engage in critical thinking, communicate effectively, collaborate, and shape and reorganize their environment by utilizing energy sources found in nature.

In an age where information and technology are becoming increasingly pervasive, aligning individuals with the technological culture in which they live is made possible through educational processes. The primary means of ensuring this is through technology education. Technology education is not only an important component of vocational or technical education but also of formal education. Through the education they receive in this course, students prepare

for higher education or life. They gain an understanding of life, science, technology, and industry. They develop their manual skills. They acquire knowledge about current and future professions. They are guided toward a profession they will enjoy and succeed in, based on their interests and abilities (Karaagacli & Erden, 2002). This is because, in addition to its educational characteristics, technology education serves the function of introducing the qualities of the working world, production processes, techniques, and tools and equipment—generally speaking—as an integral part and complement to general education.

The 21st century is often referred to as the “age of technology,” and Industry 5.0 applications are gaining prominence (Gudek, 2023). Consequently, individuals living in an industrialized society today cannot remain detached from the concepts of technology, science, and industry. For this reason, technology education is included in curricula worldwide (Sade & Coll., 2003). Similarly, in Türkiye, technology education has been incorporated into the curricula of the Ministry of National Education (MoNE) and the Council of Higher Education (CoHE). In fact, technology as a subject was discussed in terms of content and level at the 8th National Education Congress held in 1970 (MoNE, 1971). Discussions on the relationship between technology and education continued at subsequent National Education Congresses. Curricula were developed in line with these views and recommendations. In recent years, these efforts have increased due to growing developments in the field of technology. In particular, the CoHE has launched a series of initiatives in higher education as part of its digital transformation efforts (CoHE, 2026; CoHE, 2005a; CoHE, 2025b; CoHE, 2025c). Under the digital mobilization initiative, undergraduate and graduate-level artificial intelligence courses have been offered at the Data Analysis School. Technology education has become a central focus in higher education.

Aim

This study addresses questions about the distribution of graduate theses on technology education across thesis types, years of acceptance, universities, institutes, advisor titles, countries examined, and research methods used.

Method

This study is a qualitative model and employs the document analysis method. In qualitative studies, when direct observation and interviews are not feasible, written and visual materials related to the study’s research problem are utilized. Consequently, document analysis can serve as a standalone research method (Merriam, 2009; Yildirim & Simsek, 2022). The dataset consists of 57 graduate-level (master’s and doctoral) theses directly related to “technology education,” identified through a search for the terms “technology education,” “technology,” and “education” in the CoHE Thesis Center database. The first entry in this scope was made on April 16, 2025. Subsequently, the study was kept up-to-date through searches conducted at different times using the same keyword groups. Theses without publication permission were reviewed by contacting the universities and institutes where they were accepted. A thesis analysis form was used as the data collection tool in this study. In this form, graduate theses

were analyzed according to types, years, universities, institutes, advisor titles, countries studied, and research designs. The findings were presented and interpreted using frequency and percentage tables.

Findings

In this study, 57 graduate theses from 29 Turkish universities (both state and private) were analyzed and categorized by thesis type, university, year of acceptance, accepting institute, thesis advisor's title, country examined, and research design used.

Graduate Theses by Type

In Türkiye, graduate theses are prepared at higher education institutions for master's, doctoral, and artistic proficiency degrees, as well as for medical specialization, dental specialization, and medical subspecialization programs. Graduate theses in the field of technology education are conducted at master's and doctoral levels.

Table 1. Distribution of Graduate Theses by Type

<i>Thesis Type</i>	<i>f</i>	<i>%</i>
Master's Thesis	47	82,5
Doctoral Thesis	10	17,5
Total	57	100

As shown in Table 1, of the 57 graduate theses on technology education, 47 (82.5%) were master's theses and 10 (17.5%) were doctoral dissertations. Notably, doctoral theses were scarce compared to master's theses in this field. However, the experience, knowledge, and expertise gained at the master's level are further developed at the doctoral level, contributing original findings to the field.

Graduate Theses by Year of Acceptance

The first graduate thesis on technology education was accepted in 1996. In this context, the table below shows the distribution of graduate theses accepted between 1996 and 2025 by year:

Table 2. Distribution of Graduate Theses by Year of Acceptance

<i>Year</i>	<i>Master's Thesis</i>		<i>Doctoral Thesis</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
1996	1	2,1	-	-
1997	1	2,1	-	-
2001	1	2,1	-	-
2004	1	2,1	-	-
2005	1	2,1	-	-
2006	1	2,1	-	-
2007	2	4,3	1	10
2008	5	10,6	1	10
2009	5	10,6	1	10
2010	7	14,9	-	-
2011	4	8,5	-	-
2012	7	14,9	-	-
2013	1	2,1	1	10

2014	2	4,3	1	10
2015	1	2,1	-	-
2016	1	2,1	-	-
2017	1	2,1	1	10
2018	-	-	1	10
2019	2	4,3	-	-
2021	2	4,3	-	-
2023	-	-	1	10
2024	-	-	1	10
2025	1	2,1	1	10
Total	47	100	10	100

As shown in Table 2, according to data from the CoHE Thesis Center, the first graduate thesis on technology education in Türkiye was completed at the master's level in 1996 at Ankara University. Although there were some interruptions in the subsequent period, graduate theses on technology education have continued to be prepared. The thesis in question is a master's thesis titled "*Evaluation of the effectiveness in the development of a project unit to achieve objectives in technology education,*" prepared by Turan (1996) at the Institute of Social Sciences at Ankara University. The thesis does not have publication permission from the CoHE Thesis Center. The first doctoral thesis was prepared in 2007 at the Institute of Educational Sciences at Gazi University by Suzen, titled "*The effect of science and technology education supported by active learning techniques on learning outcomes.*" While at least one graduate-level thesis (master's or doctoral) on technology education is prepared each year, an analysis by year reveals a lack of continuity in the production of master's and doctoral theses.

Graduate Theses by University

As of 2026, there are 204 universities in Türkiye, including 129 state universities (S) and 75 private universities (P). Graduate theses on technology education were identified at 29 of these universities, including 27 state universities and 2 private universities. The distribution of theses by university is presented in Table 3 below.

Table 3. Distribution of Graduate Theses by University

University	Master's Thesis		Doctoral Thesis	
	<i>f</i>	%	<i>f</i>	%
Akdeniz(S)	3	6,4	-	-
Aksaray(S)	1	2,1	-	-
Anadolu(S)	-	-	1	10
Ankara(S)	3	6,4	-	-
Bahçeşehir(P)	1	2,1	-	-
Balıkesir(S)	-	-	1	10
Çanakkale Onsekiz Mart(S)	2	4,3	-	-
Çukurova(S)	2	4,3	-	-
Dokuz Eylül(S)	5	10,6	1	10
Erciyes(S)	1	2,1	-	-
Erzincan(S)	1	2,1	-	-
Eskişehir Osmangazi(S)	1	2,1	-	-
Gazi(S)	9	19,1	2	20
Hacettepe(S)	2	4,3	2	20
İnönü(S)	1	2,1	-	-
İstanbul Teknik(S)	1	2,1	2	20
Kastamonu(S)	1	2,1	-	-

Marmara(S)	2	4,3	-	-
Muğla(S)	1	2,1	-	-
Necmettin Erbakan(S)	-	-	1	10
Niğde(S)	1	2,1	-	-
Okan(P)	1	2,1	-	-
Ortadoğu Teknik(S)	2	4,3	-	-
Selçuk(S)	1	2,1	-	-
Sivas Cumhuriyet(S)	1	2,1	-	-
Trakya(S)	1	2,1	-	-
Uşak(S)	1	2,1	-	-
Yıldız Teknik(S)	1	2,1	-	-
Yüzüncü Yıl(S)	1	2,1	-	-
Total	47	100	10	100

As shown in Table 3, 47 master's theses on technology education have been completed at 29 universities in Türkiye. Among these universities, Gazi University, one of Türkiye's long-established institutions, stands out with 9 theses (19.1%), followed by Dokuz Eylül University with 5 theses (10.6%). At the doctoral level, 10 theses have been prepared at 7 universities. Among these universities, Gazi University stands out with 2 theses (20%), Hacettepe University with 2 theses (20%), and Istanbul Technical University with 2 theses (20%).

Graduate Theses by Accepting Institute

In Türkiye, graduate theses are monitored, approved, and accepted by the graduate schools of universities. They are then published by the CoHE Thesis Center if the author has granted permission. If the author has imposed any restrictions, only basic information about the thesis and an abstract are included. Printed copies of theses without publication permission can be accessed through university libraries via the "Türkiye Document Supply and Lending System" (TUBESS, 2025a; TUBESS, 2025b). In Türkiye, universities have institutes operating under various names. The study reveals that graduate theses on technology education were prepared within the "Social Sciences," "Educational Sciences," "Natural Sciences," and "Graduate Education" institutes.

Table 4. Distribution of Graduate Theses by Accepting Institute

<i>Institute</i>	<i>Master's Thesis</i>		<i>Doctoral Thesis</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
Educational Sciences	17	36,2	6	60
Natural and Applied Sciences	14	29,8	3	30
Graduate School of Education	-	-	1	10
Social Sciences	16	34,	-	-
Total	47	100	10	100

As shown in Table 4, 17 (36.2%) master's theses were prepared at the institutes of educational sciences. This is followed by 16 (34%) master's theses at the institutes of social sciences and 14 (29.8%) master's theses at the institutes of natural and applied sciences. At the doctoral level, 6 (60%) theses were completed at educational science institutes and 3 (30%) at natural and applied science institutes.

Graduate Theses by Advisor Title

In Türkiye, to serve as a thesis advisor for graduate theses at universities, one must be a faculty member, and to become a faculty member, one must hold at least a doctoral (PhD) degree. Faculty members are granted the titles of Assistant Professor (Asst. Prof.), Associate Professor (Assoc. Prof.), and Professor (Prof.) based on their research, academic degrees, and experience.

Table 5. Distribution of Graduate Theses by Advisor Title

<i>Title</i>	<i>Master's Thesis</i>		<i>Doctoral Thesis</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
Prof.	9	19,1	6	60
Assoc. Prof.	15	31,9	2	20
Asst. Prof.	22	46,8	2	20
PhD	1	2,1	-	-
Total	47	100	6	100

As shown in Table 5, of the 47 master's theses, 9 (19.1%) had Professors as advisors, 15 (31.9%) had Associate Professors, and 22 (46.8%) had Assistant Professors. Of the 10 doctoral dissertations, 6 (60%) had Professors as advisors, 2 (20%) had Associate Professors, and 2 (20%) had Assistant Professors.

Graduate Theses by Country Examined

The countries examined based on the titles of graduate theses on technology education were Türkiye, a foreign country, and comparisons between Türkiye and a foreign country.

Table 6. Distribution of Graduate Theses by Country Examined

<i>Country</i>	<i>Master's Thesis</i>		<i>Doctoral Thesis</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
Türkiye	46	97,9	10	100
Türkiye And Foreign Countries	1	2,1	-	-
Total	17	100	6	100

As shown in Table 6, 46 (97.9%) of the master's theses focused on technology education in Türkiye, while 1 (2.1%) compared technology education in Türkiye and a foreign country. This thesis, titled "*Comparison of Türkiye and Finland primary school programs in terms of technology education*", was prepared by Duger in 2005. All doctoral theses focused exclusively on technology education in Türkiye.

Graduate Theses by Research Methodology

When examining the research methods used in graduate theses on technology education, it is evident that both qualitative and quantitative methods are employed. In some theses, however, a mixed-methods approach (combining quantitative and qualitative methods) has been used.

Table 7. Distribution of Graduate Theses by Research Methodology

<i>Methodology</i>	<i>Master's Thesis</i>		<i>Doctoral Thesis</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
Quantitative	25	53,2	5	50
Qualitative	16	34,	3	30

Mixed(Qualitative and Quantitative)	6	12,8	2	20
Total	47	100	10	100

As shown in Table 7, quantitative methods were used in 25 (53.2%) of the master's theses, qualitative methods in 16 (34%), and mixed methods in 6 (12.8%). Similarly, among doctoral-level theses, quantitative methods were used in 5 (50%), qualitative methods in 3 (30%), and mixed methods in 2 (20%). The prevalence of quantitative research in both master's and doctoral-level theses is generally attributed to the connection between technology education and science instruction, as well as the conduct of experimental studies.

Conclusion, Discussion, and Recommendations

This study examined graduate theses on technology education prepared in Türkiye between 1996 and 2025. When the theses were analyzed in tables organized by categories, it was found that 57 graduate theses—47 at the master's level and 10 at the doctoral level—had been prepared at 29 universities. When the data is scaled to the number of universities in Türkiye, it indicates that the volume of graduate-level research on technology education is low. Similarly, as seen in the study, graduate theses were limited to Türkiye. Only one master's thesis related to technology education has been prepared in countries outside Türkiye. This situation indicates that, despite the efforts of MoNE and CoHE to develop technology education, internationalization at the graduate level has not been fully achieved. However, considering that technology is developing rapidly, digitalization is increasing, and applications such as artificial intelligence are becoming dominant in every aspect of life, technology education is becoming increasingly important. In particular, global developments in technology education must be closely monitored. This is because technology education is a dynamic process that evolves in response to changes in technology. The objectives and content of technology education are in a state of constant development. Understanding how technology education is conceptualized and implemented in other countries will provide significant contributions to our own practices in this regard. By comparing current technology education curricula with previous ones, we will identify areas of progress or shortcomings. The technology education curriculum will then be revised accordingly.

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