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A content analysis of graduate dissertation using the flipped learning method

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Highlights

- The first graduate dissertation on flipped learning in Turkey were completed in 2014.
- Graduate dissertation on flipped learning completed in Turkey between 2014 and 2023 were completed.
- 51 graduate dissertations were predominantly conducted in 2019 and 2020. Of the 34 dissertations completed in 2019, 27 were master's dissertations and 7 were doctoral dissertations, while out of the 32 theses completed in 2020, 20 were master's dissertations and 12 were doctoral dissertations.
- Flipped learning was mostly preferred in the disciplines of foreign language education, education programs and instruction and computer education and instructional technology.

Abstract

The aim of this study was to make a situation assessment by examining the postgraduate theses on flipped learning in Turkey between 2014-2023 in terms of thematic, methodological, and analysis techniques. In the study, the systematic review method, which is one of the literature review methods, was used, and data were collected by document analysis method with 177 graduate dissertation samples sourced from the National Thesis Center of the Council of Higher Education. Thematic examination revealed that the many of studies were completed in 2019 at the master's level within programs at Gazi University, primarily in the Institute of Social Sciences and focusing on the discipline of foreign language education. Methodologically, mixed research methods were frequently used, with the pretest-posttest control group design being prevalent, and a university-level sample size ranging from 1 to 50. Academic achievement tests were the preferred quantitative data collection tools, while interviews were commonly used for qualitative data. In terms of analysis techniques, the t-test dominated quantitative data analysis, while content analysis was the primary method for qualitative data analysis.

Article Info: Research Article

Keywords: *Flipped Learning, Graduate Dissertation, Document Analysis, Content Analysis.*

1. Introduction

Today, individuals, especially students, require specific skills to adapt to the rapidly evolving technological landscape. Commonly known as 21st-century skills, these include problem-solving, critical thinking, communication, creativity, information and media literacy, collaboration, and self-management. The significance of self-management within these skills is increasingly pronounced (Geisinger, 2016). Fulton (2012) asserts that students actively engaging in the learning process are more effective compared to traditional environments. Similarly, Alsancak Sırakaya (2015) emphasizes the importance of self-management skills, highlighting the learner's active role in the learning and understanding process, taking

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responsibility for their own education. In contrast to the typically passive stance in traditional methods, flipped learning expects learners to be proactive and accountable for their learning.

The flipped learning model is concisely characterized as the inversion of traditional teaching methods, entailing home lessons followed by activities in the classroom (Bergmann & Sams, 2012; Sohrabi & Iraj, 2016). In contrast to the conventional approach, where subject instruction occurs in school classrooms and related activities serve as homework, flipped learning swaps the roles by replacing in-class lessons with home-based activities. In the literature, terms such as "inverted classroom", "flipped learning", "flipped classroom", "flipped classroom model", "homework at home", "homework at school model", "transformed classroom", and "technology-supported flexible learning model" are commonly used (Bishop & Verleger, 2013; Bolat, 2016; Demiralay & Karataş, 2014; Gündüz & Akkoyunlu, 2016; Lage et al., 2000; Özbay & Sarıca, 2019; Ünsal, 2018; Yıldız et al., 2017). discusses various names associated with flipped learning.

Mazur (1997) was an early proponent, suggesting students learn foundational material at home and engage in homework activities during class time. According to Lage et. al. (2000), the class has been flipped, leading to a shift in activities from what used to be confined to the classroom to now occurring outside of it, and vice versa. Bergmann and Sams (2012) defined the flipped classroom as the dissemination of pre-recorded lesson videos to students outside the classroom, with subsequent in-class activities involving group work. Bishop and Verleger (2013) further elaborate on the flipped classroom, emphasizing interactive group learning within the classroom and individual computer-based instruction outside. Graham (2006) characterizes the flipped classroom as a blend of face-to-face and online education. Figure 1 provides a visual representation of Bishop and Verleger's definition.

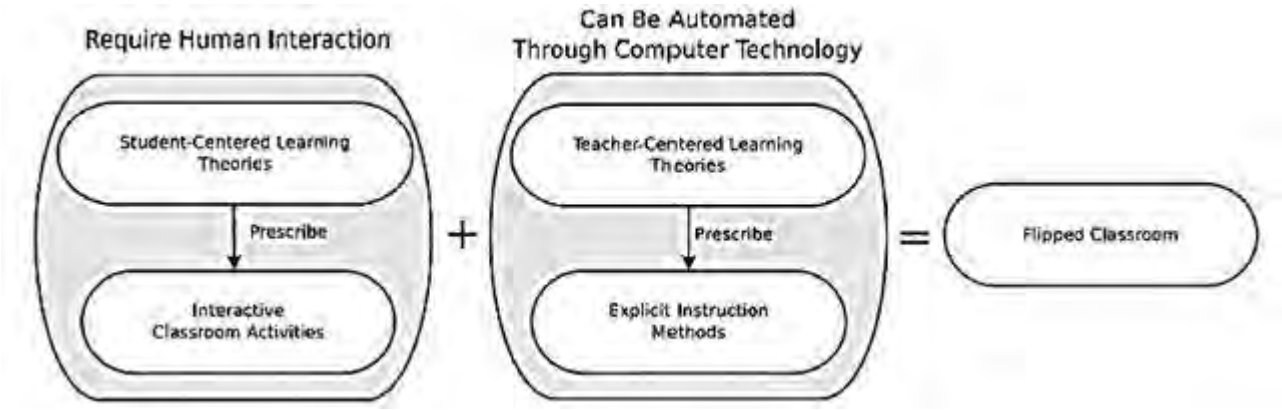

Fig. 1. The flipped classroom activities (Bishop & Verleger, 2013)

Bishop and Verleger (2013) defined the flipped classroom model as a structure consisting of two parts: they described out-of-class activities as those occurring under teacher control and employing technology alongside traditional learning methods, while they characterized in-class activities as student-centered and interactive, emphasizing human interaction. In the flipped classroom model, students engage with subject content through out-of-class activities, allowing them to grasp the material before attending in-person classes. This approach contrasts with traditional methods where students comprehend the lesson content during classroom sessions. As a result, in the flipped classroom, students arrive prepared, enabling a more active and participatory classroom experience that involves various activities, applications, and projects in the flipped classroom (Yıldız Durak, 2017). Bishop and Verleger's (2013) comparative definitions of the traditional classroom and flipped classroom are briefly presented in Table 1 and Table 2.

Table 1.

Restricted definition of the flipped classroom.

Style	Inside Class	Outside Class
Traditional	Lectures	Practice Exercises & Problem Solving
Flipped	Practice Exercises & Problem Solving	Video Lectures

Table 2.

Broader definition of the de-facto flipped classroom.

Inside Class	Outside Class
Questions & Answers	Video Lectures
Group-Based/Open-Ended Problem Solving	Closed-Ended Quizzes & Practice Exercises

Baker (2000) introduced the flipped teaching model as a paradigm where the activities typically assigned for home and classroom settings are reversed, deviating from traditional teaching methods. Under this model, students are tasked with preparing for the subject matter independently at home before attending class, where they then engage in activities relevant to the topic. This approach holds significant value in fostering teamwork among students. The flipped classroom method is characterized as an instructional strategy wherein lectures and homework are swapped, providing students with the opportunity to collaborate in teams (Baker, 2000).

Chen et al. (2014) extended the framework of the concept of "flipped learning" with the "seven pillars of flipped learning" model (Figure 2). According to this model, the concept of Active Learning and Engagement is at the core, and the seven pillars of Flipped Learning consist of: 1) flexibility of the environment, 2) learning culture, 3) intentionality of the content, 4) professionalism of the educator, 5) progressiveness of learning activities, 6) engaging and effective learning activities, and 7) diversified and seamless learning environments. PED progressive activities, engaging experiences, and various platforms were added to the pillars of flexibility of the environment, learning culture, intentionality of the content, and professionalism of the educator expressed as FLIP, and the FLIPPED model was created (Wu et al., 2017).

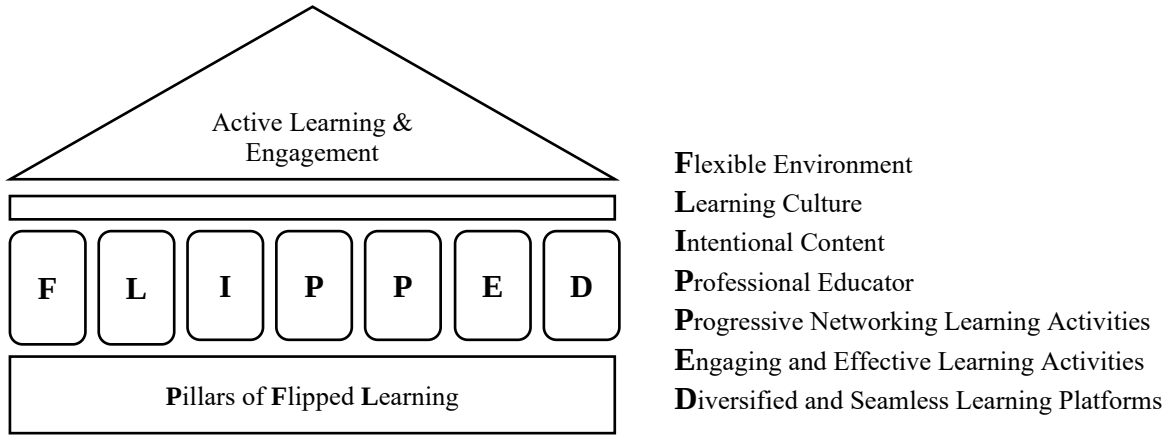

Fig. 2. Seven pillars of flipped learning model (Chen et al., 2014)

The collaborative aspect of this approach, allowing students to spend time with peers and instructors while utilizing skills such as problem-solving, criticism, and synthesis during lessons, is emphasized by Honeycutt and Garrett (2014). In the flipped classroom model, the locus of responsibility shifts from the teacher to the learner, placing the learner at the forefront of the educational process (Johnson et al., 2014). Gaughan (2014) contends that in flipped learning, students exhibit increased interest in course materials and actively participate with enthusiasm in class discussions.

The flipped classroom method has attracted academic attention, especially because it includes advanced technologies, so research on this method has increased in recent years (Davies et al., 2013; Lo & Hew, 2017). The number of graduate dissertations on the flipped learning approach has increased similarly. The goal of doing a comprehensive analysis of these theses is to get insight into the employment of cutting-edge apps in the classroom. According to the researcher, using the flipped classroom concept will benefit educators as well as students.

This study seeks to conduct a comprehensive content analysis of graduate dissertations focused on flipped learning in Turkey spanning the years 2014 to 2023. Its objective is to provide a thorough understanding of the landscape of graduate dissertations on flipped learning in Turkey, shedding light on their thematic, methodological, and analytical techniques. To achieve this overarching objective, the study defines specific sub-problems as follows:

1. Thematic Characteristics:
    - What are the overall thematic attributes, including the year of completion, program type, language, university, language of publication, and disciplinary field, exhibited in graduate dissertation on flipped learning?
2. Methodological Characteristics:
    - What are the general methodological features encompassing research type, research model, sample level, sample size, and the employment of both quantitative and qualitative data collection tools found in graduate dissertation on flipped learning?
3. Analysis Techniques:
    - What are the overarching characteristics of graduate dissertation on flipped learning concerning analysis techniques, specifically exploring both/or quantitative and qualitative data analysis methods?

2. Literature review

The literature review reveals insights from various studies on flipped learning conducted by different researchers. Demirer and Aydın (2017) conducted content analysis on 29 graduate dissertation and 61 articles spanning 2011 to 2015, indicating a prevalence of research in the fields of foreign language education and mathematics education. Uluçınar Sağır and Sakar (2017) employed document analysis on 50 articles, 9 graduate theses, and 2 books, noting a focus on computer education, a predominant university-level sample, investigation of the academic achievement variable, and significant findings.

Köse and Yüzüak (2020) examined publications in mathematics and science education from 2009 to 2019, highlighting a prevalence of studies in science education, a higher frequency of master's studies compared to doctoral studies, a concentration at the university and secondary school levels for the sample, and a preference for quantitative research methods. Birgili et al. (2021), in their research where they examined 316 articles, stated that the studies were mostly applied in higher education as a sample level, mixed method research was used the most as a research method, and the results pointed out an increase in student performance and a positive effect on cognitive, affective, and social skills. Chen et al. (2022) stated in their research that they examined 44 articles on science education, mostly on the subjects of chemistry, physics, biology and natural sciences and ecology, mostly with university students, and quantitative research methods were used.

Ceylan and Hamzaoğlu (2022) investigated into graduate dissertation in science education using the flipped learning approach, finding a primary focus on the secondary school level, utilization of videos as teaching materials, and a prominent examination of the academic achievement variable. Özbay and Sarıca (2019) analyzed 64 articles published between 2014 and 2019, identifying a preference for university students as the sample level, predominance of quantitative research methods, a frequent application in the field of foreign language education, and a predominant investigation into academic achievement. Fisher et al. (2024), in their study in which they analyzed 40 articles, stated that while students' liking to learn in flipped

classroom learning environments was the strongest finding, the evidence of research on the contribution of flipped learning to educational outcomes was not robust. They also stated that flipped learning environments for teaching English as a foreign language are associated with the ability to enhance idiomatic knowledge, oral and written performance, motivation, and higher order thinking skills. Li et al. (2023) stated in their study investigating the relationship between flipped learning and active learning that 65% of the 435 articles they examined were not connected to theory and conceptual framework, the most common subject area was STEM subjects, the most commonly used methodology was quantitative methods, followed by mixed methods.

Yıldız et al. (2017) characterized the flipped learning model as a learner-centered and flexible blended learning approach, favored by teachers, resulting in increased learner academic achievement, and emphasized the need for appropriately designed learning environments. Ezentaş and Karakaş (2021) analyzed 10 studies in mathematics education, finding a prevalent use of quasi-experimental designs, a focus on achievement, a sample level predominantly comprising secondary school and university students, and evidence of increased learner achievement and positive attitude changes. Evans et al. (2019) stated that the most common quasi-experimental design, the most common sample level was graduate students, and that most of the studies examined found a significant difference in favor of Flipped learning compared to the traditional group. Turan and Akdag-Cimen (2020) analyzed 43 articles and stated that the most used research method in ELT studies in the flipped classroom is mixed and quantitative methods, and the benefits of the flipped classroom method are mentioned in most of the studies examined. Rusnilawati et al. (2023), in their research in which 193 academic studies conducted at the basic education level were analyzed, stated that the most studies were conducted in 2020 and 2021, the most experimental design research method was used, the most studies were conducted in the USA and then in Spain, and the most studies were conducted with pre-service teachers as the sample level. Tunggyshbay et al. (2023) stated that in their research where they examined 30 articles, quantitative research methods and experimental studies were mostly used. Perez et al. (2023) stated that most of the studies included in their research used quantitative approaches and that the number of studies on active learning has increased over time.

Karagöl and Esen (2019) identified a positive impact of the flipped learning model on academic achievement, particularly effective in small groups. These collective findings contribute to a nuanced understanding of the varied applications and outcomes associated with the flipped learning model in different educational contexts. Østerlie et al. (2023) in their study where they examined 16 articles on physics education, stated that the majority of the studies focused on motivation and success, that student motivation changed positively, and although it was observed that motor skills improved, more research was needed on this subject.

When we look at the review studies on flipped learning conducted in recent years, studies focusing on various fields and different aspects were also found. Fernández-Martín et al. (2020), in their research on mathematics in higher education, stated that flipped learning led to an improvement in students' knowledge and attitudes towards mathematical content and discipline. Lo (2023) presented the RAISE (Resources, Activities, Institutional facilitation, Support and Evaluation) design framework by analyzing 70 articles to provide a basis for active teaching improvement. In the 10 experimental articles they examined on the integration of artificial intelligence-based chat robots into flipped learning, Lo and Hew (2023) stated that chat robots were used to facilitate learning outside the classroom and that it was beneficial to integrate chat robots into flipped learning and that more research was needed on this subject. Similarly, Baskara (2023) stated that chat robots can help increase motivation and ensure participation. The flipped learning approach is a teaching strategy that can be used in vocational education, according to Zhou (2023). Fonseca et al. (2023) stated that increased student engagement and data to evaluate their performance were the most frequently cited benefits; they identified the increase in time and effort spent by teachers and students as the most encountered difficulties. Alonso et al. (2023) discusses the importance of well-designed gamification used in conjunction with the flipped learning model to encourage students to engage in the learning process and improve their perceptions of learning. According to Baig and Yadegaridehkordi (2023), the flipped learning model is a valuable approach that generally enhances student learning despite

challenges such as time-consuming, lack of motivation for pre-class work, lack of guidance outside the classroom, quality of recorded lectures, lack of technological resources, and adoption of the flipped classroom. Aljaber et al. (2023) reported that the flipped learning model improved students' critical thinking and communication skills, self-confidence, and time management. Dafun Jr et al. (2024) state that combining the flipped learning method with other new techniques in sports teaching at universities provides good results.

3. Methodology

In this section, the research model, data collection tools, sampling, data analysis, validity and reliability are mentioned.

3.1. Research Model/Design

In this research, systematic review method, one of the qualitative research methods, was used. Systematic reviews are a method used to search, compile, critique, and summarize the best available evidence on a clinical question (Liberati et al., 2009; Munn et al., 2018). Systematic review is a specific methodology that reports evidence by analyzing and synthesizing data (Denyer & Tranfield, 2009). In general, systematic reviews are described as the process of synthesizing articles that address a particular research topic by grouping them according to predefined criteria with the goal of providing a response (Yılmaz, 2021).

3.2. Data Collecting Methods

The graduate dissertation within the sample were subjected to analysis through the document analysis method. Document analysis, a crucial research method in situations where direct observation or interviews are not feasible, was employed (Yıldırım & Şimşek, 2016). This method involves a meticulous and systematic examination of the content of written documents (Wach & Ward, 2013). Both document analysis and content analysis were utilized to organize and categorize the data (Labuschagne, 2003). The descriptive analysis method was used to assess the data because the themes and sub-themes that would be investigated in the research were predetermined. According to Creswell and Creswell (2017), descriptive analysis is used in qualitative research to help with the presentation of study findings and to provide a descriptive summary of the data. In a descriptive analysis, the reader is supplied with the data gathered in relation to the subject identified by the pre-established research questions through a methodical and understandable organization, description, and interpretation (Yıldırım & Şimşek, 2016).

During the examination of the theses accessed through the National Thesis Center, a 20-item evaluation form was created by the researcher using the Microsoft Excel program. Information pertaining to each graduate dissertation was then transcribed into this form. Subsequently, the data transferred to the evaluation form underwent a comprehensive review by the researcher, leading to data integration. Notably, variations were observed in the presentation of information across the theses. For instance, some theses included both the main discipline and branch of science information, while others solely included department information. Additionally, variations in the terminology used, such as “department” and “main branch of science” were noted. To address these discrepancies, the evaluation table was revisited multiple times, ensuring thorough checks and corrections were conducted to accurately calculate frequencies.

3.3. Sampling

The study analyzed a total of 177 graduate dissertation (121 master, 56 doctoral) obtained from the National Thesis Center of the Council of Higher Education (Appendix 1). The graduate dissertation used in this study are given in Appendix 2.

3.4. Data Analysis

The data from the reviewed and corrected evaluation form were tabulated using various features and functions of the Microsoft Excel program, including pivot table, pivot chart, convert text to columns, countif(), and conditional formatting. Additionally, certain tables were visualized using suitable graphic types.

3.5. Validity and Reliability

While validity refers to the accuracy, appropriateness, and meaningfulness of the measurement without confounding it with other variables (Wallen & Fraenkel, 2013), reliability is expressed as the generalizability of the results obtained within the scope of the research (Krippendorff, 2018). To ensure the validity of the research, the researcher prepared a data entry form, and the data were entered into the tables. Opinions were sought from two different experts regarding the entry and analysis of the data into the tables. A consensus was reached in the analysis of the data, incorporating expert opinions. In order to ensure coder reliability, some randomly selected coding was reviewed by another expert and the agreement rate was found to be (91%) using the formula "reliability=consensus/(consensus+disagreement)". According to Miles and Huberman (1994), it can be said that there is a high level of agreement between the coders.

4. Findings

4.1 Findings of thematic characteristics

In this section, under the heading of thematic characteristics, the findings related to the year, program type, university, language of publication, institute, and disciplinary areas studied in the graduate dissertation on flipped learning are presented.

The distribution of the graduate dissertation on flipped learning according to years was given in Table 3.

Table 3.

Distribution of graduate dissertation by years

Year	f	%
2014	2	1,13
2015	6	3,39
2016	13	7,34
2017	12	6,78
2018	28	15,82
2019	34	19,21
2020	32	18,08
2021	24	13,56
2022	15	8,47
2023	11	6,21
Total	177	1,13

When the data in Table 3 are examined, it is seen that the first graduate dissertation on flipped learning were completed in 2014, and the most graduate dissertation were conducted in 2019 and then in 2020.

The distribution of graduate dissertation by year and program type (master's and doctorate) was shown in Table 4 and Figure 3.

Table 4.

Distribution of graduate dissertation by year and program type

Year	Master	Doctorate	Total
2014	1	1	2
2015	3	3	6
2016	10	3	13
2017	7	5	12
2018	14	14	28
2019	27	7	34
2020	20	12	32
2021	20	4	24
2022	11	4	15
2023	8	3	11
Total	121	56	177

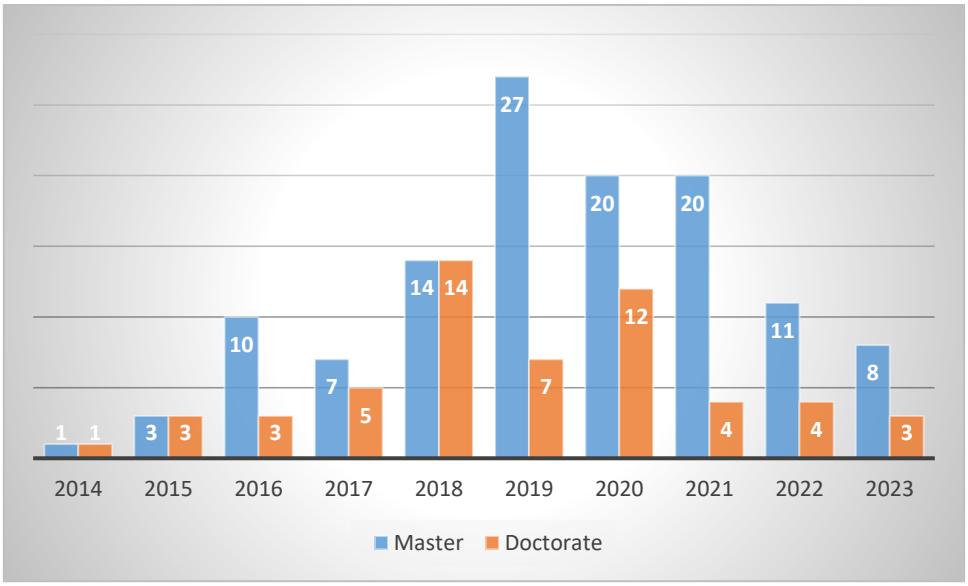

Fig. 3. Distribution graduate dissertation by year and program type

As seen in Table 4, out of the 177 graduate dissertations analyzed, 56 are at the doctorate level, while 121 are at the master's level. According to the data presented in Table 4 and Figure 2, the number of completed master's and doctorate dissertations in 2014, 2015, and 2018 is equal, whereas the number of dissertations completed in the master's program is higher in other years.

It has been determined that graduate dissertation was conducted at 66 different universities. In Table 5, universities with two or more completed graduate dissertation and program types are listed in descending order according to the number of graduate dissertations.

Table 5.

Number of doctorate and master's dissertations by university (two or more)

University name	Master	Doctorate	Total
Gazi University	8	12	20
Atatürk University	6	5	11
Bahçeşehir University	6	1	7
Akdeniz University	6	-	6
Eskişehir Osmangazi University	3	2	5
Hacettepe University	3	2	5
Marmara University	3	2	5
Mersin University	4	1	5
Ankara University	1	3	4
Aydın Adnan Menderes University	3	1	4
Bursa Uludağ University	3	1	4
Fırat University	2	2	4
İnönü University	2	2	4
Necmettin Erbakan University	4	-	4
Orta Doğu Teknik University	2	2	4
Sakarya University	2	2	4
Süleyman Demirel University	4	-	4
Anadolu University	1	2	3
Çağ University	3	-	3
Dokuz Eylül University	2	1	3
Karadeniz Teknik University	1	2	3
Ondokuz Mayıs University	2	1	3
Van Yüzüncü Yıl University	3	-	3
Yıldız Teknik University	2	1	3
Afyon Kocatepe University	1	1	2
Balıkesir University	-	2	2
Bülent Ecevit University	2	-	2
Düzce University	-	2	2
Erciyes University	-	2	2
Kafkas University	2	-	2
Kastamonu University	2	-	2
Muğla Sıtkı Koçman University	2	-	2
Recep Tayyip Erdoğan University	1	1	2
Tokat Gaziosmanpaşa University	1	1	2
Trabzon University	-	2	2
Ufuk University	2	-	2
Yeditepe University	2	-	2
Zonguldak Bülent Ecevit University	2	-	2

One thesis on flipped learning was completed at Ağrı İbrahim Çeçen, Aksaray, Amasya, Bartın, Başkent, Bayburt, Boğaziçi, Bolu Abant İzzet Baysal, Çanakkale Onsekiz Mart, Ege, Erzincan Binali Yıldırım, Gaziantep, Giresun, İstanbul Medeniyet, İstanbul Sabahattin Zaim, İstanbul-Cerrahpaşa, Kahramanmaraş Sütçü İmam, Karabük, Karamanoğlu Mehmetbey, Kırşehir Ahi Evran, Kilis 7 Aralık, Maltepe, Mimar Sinan Fine Arts, Nevşehir Hacı Bektaş Veli, Pamukkale, Selçuk, Trakya, and Uşak Universities. These theses are doctoral at Bolu Abant İzzet Baysal and Trakya Universities and master's at other universities.

According to the data presented in Table 5, Gazi University ranks first in the list with a total of 20 graduate dissertation, 12 of which are at the doctoral level, while Atatürk University ranks second with a total of 11 theses. Table 6 presents the data examining the publication languages of the graduate dissertation.

Table 6.

Languages of graduate dissertation

Language	Master	Doctorate	Total
Turkish	92	48	140
English	29	7	36
French	1	-	1
Total	121	56	177

Table 6 demonstrates that out of the total 177 graduate dissertation, 140 were published in Turkish, 36 in English, and one in French. When we examine the distribution of graduate dissertation in terms of the main discipline, the data provided in Table 7 are presented.

Table 7.

Distribution of graduate dissertation by Institute

Name of Institute	f
Institute of Educational Sciences	115
Institute of Social Sciences	37
Institute of Science and Technology	13
Institute of Postgraduate Education	9
Institute of Health Sciences	3
Total	177

Table 7 was determined that most of the graduate dissertation examined on flipped learning were affiliated with the Institute of Educational Sciences.

The rates of doctorate and master's degrees in the graduate discipline areas examined related to flipped learning are shown in Table 8.

Table 8.

Distribution of graduate dissertation by discipline

Discipline field	Master	Doctorate	Total
Foreign Language Education	27	4	31
Education Programs and Instruction	14	13	27
Computer Education and Instructional Technology	15	11	26
Science Education	17	4	21
Social Studies Education	10	3	13
Primary Mathematics Education	5	2	7
Classroom Education	5	2	7
Education Technologies	5	1	6
Mathematics Education	4	1	5
Music Education	1	4	5
Turkish Education	2	2	4
Nursing	-	3	3
English Language and Literature	2	1	3
Chemistry Education	3	-	3
Biology Education	2	-	2
Geography Education	1	1	2
Education Management and Supervision	2	-	2
Business	2	-	2
Western Languages and Literatures	1	-	1
Physical Education and Sports Teaching	1	-	1
Information Technology	1	-	1
Eastern Languages and Literatures	-	1	1
Electronic-Computer Education	1	-	1
Philosophy and Religious Sciences	-	1	1
Physics Education	-	1	1
Tourism Management	-	1	1
Total	121	56	177

It is seen that most of the graduate dissertation on flipped learning are in the field of foreign language education, followed by curriculum and instruction, computer education, and instructional technology education.

4.2 Findings of methodological characteristics

In this section, findings related to the research type, research model, sampling level, sample size, and data collection tools of graduate dissertation on flipped learning are presented under the title of methodological features. The distribution of graduate dissertation on flipped learning according to the research methods used is given in Table 9.

Table 9.

Distribution according to research method

Type	f
Mixed research methods	82
Quantitative research methods	68
Qualitative research methods	27
Total	177

When analyzing Table 9 and Figure 4, it is evident that the mixed method is the most preferred research approach. The research models used in graduate dissertation on flipped learning and their distribution according to program type are shown in Table 10.

Table 10.

Research model

Research Model	Master	Doctorate	Total
Experimental Design	93	46	139
Case Study	11	4	15
Action Research	8	4	12
Descriptive Survey Research	8		8
Case Study and Action Research		1	1
Phenomenology	1		1
Design Based Research		1	1
Total	121	56	177

According to Table 10, it is evident that the experimental design type is mostly preferred as the research model in the studies. The experimental design was used to collect quantitative data both when the research method was specified as a quantitative research method and when it was specified as a mixed research method. Figure 4 shows the graph, including the number and percentages of the subtypes of the studies in which an experimental design was adopted.

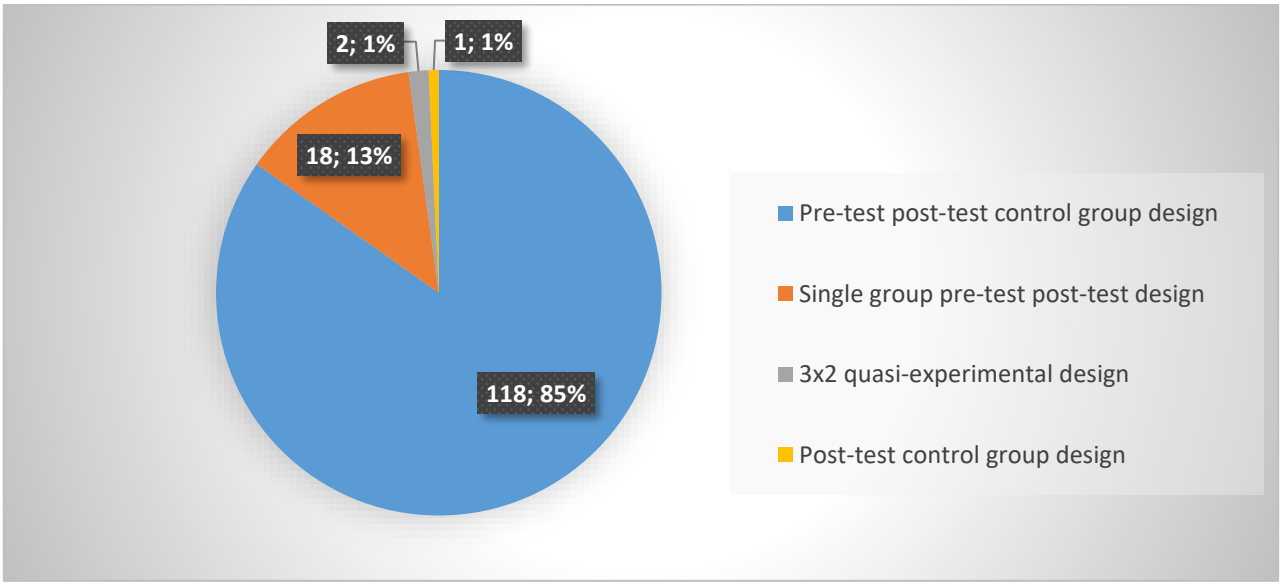

Fig. 4. Distribution by experimental design type

As seen as in Figure 4, out of the 138 graduate dissertations adopting the experimental design type as the total research model, 117 consist of the pretest-posttest control group design. This corresponds to 85% of the studies adopting the experimental design model. Table 11 shows the sampling level used in the graduate dissertation on flipped learning.

Table 11.

Distribution of graduate dissertation according to sample level

Sample level	f
University	62
Middle School	54
High School	27
Primary School	12
University Preparation	9
Teacher	4
Teaching staff	3
Special language institution	2
Secondary School and Teacher	2
Thesis	2
Total	177

When the data in Table 11 are analyzed, it is seen that most of the graduate dissertation were conducted with university students, followed by studies that selected secondary, high school, and primary school students as samples. Table 12 shows the sample size ranges used in graduate dissertation.

Table 12.

Distribution of sample size

Sample size	f
1-50	98
51-100	63
101-150	7
151-200	4
201-250	2
251 and more	3
Total	177

Table 12 shows that 98 studies were conducted with a sample size in the range of 1-50 at most. Table 13 shows the quantitative data collection tools used in at least more than one graduate dissertation.

Table 13.

Distribution of quantitative data collection tools

Quantitative data collection tools	f
Academic achievement test	106
Attitude scale	41
Motivation scale	21
Perception scale	12
Self-learning scale	6
Readiness scale	6
Autonomy scale	5
Self-regulation skills questionnaire	5
Anxiety scale	4
Achievement test	3
Motivation and learning strategies scale	3
Literacy scale	3
Critical thinking tendencies scale	3
Learning styles scale	2
Scientific process skills scale	2
Cognitive load scale	2
Computational thinking scale	2

According to the data in Table 13, it is observed that academic achievement tests are the most preferred quantitative data collection tools in studies on flipped classrooms, while attitude and motivation perception scales are the least preferred, respectively. Table 14 presents the qualitative data collection tools and methods used in graduate dissertation on flipped learning.

Table 14.

Distribution of quantitative data collection tools and methods

Quantitative data collection tools and methods	f
Interview	84
Observation	22
Graded scoring key	19
Focus group interview	16
Diary (student/teacher/researcher)	16
Opinion form	15
Document	6
Reflective report	5
Online learning environment records	4
Portfolio	3
Field grade	2
Camera recordings	2
Self-assessment form	2

In studies on flipped classrooms, the interview technique is predominantly used as a qualitative data collection tool or technique. While most of them were individual interviews, focus group interviews were employed in 16 graduate dissertation, and opinion forms were utilized in 15 studies. Additionally, observation, rubrics, and diaries are other commonly preferred data collection tools.

4.3 Findings of analysis techniques

In this section, under the title of analysis techniques, the findings related to the quantitative and qualitative data analysis methods of graduate dissertation on flipped learning are presented. Table 15 shows the tests used in the analysis of the data collected with quantitative data collection tools.

Table 15.

Distribution of quantitative data analysis tests

Quantitative data analysis tests	f
t test	93
Mann Whitney U test	32
Wilcoxon signed-rank test	25
ANOVA	22
ANCOVA	18
MANOVA	7
Shapiro wilk test	6
Kruskal Wallis	4
Pearson chi-square test	3
Friedman test	3
MANCOVA	2
Kolmogorov Smirnov test	2

Table 15 shows that the most used tests in the analysis of quantitative data from graduate dissertation on flipped learning are the t-test, Mann Whitney U test, Wilcoxon signed-rank test, and ANOVA. Table 16 lists the techniques used in the analysis of qualitative data in graduate dissertation on flipped learning.

Table 16.

Distribution of qualitative data analysis techniques

Qualitative data analysis techniques	f
Content analysis	84
Descriptive analysis	35
Document analysis	3
Inductive analysis	3

As indicated in Table 16, the most frequently employed techniques in the analysis of qualitative data were content analysis and descriptive analysis.

5. Discussions, Conclusion and Suggestions

In this study, various characteristics of 177 graduate dissertation on flipped learning, accessed through the National Thesis Center of the Council of Higher Education, were examined under the headings of thematic, methodological, and analysis methods. In this section, the results obtained by examining graduate dissertation completed between 2014 and 2023 are presented.

5.1. Thematic characteristics

The first graduate dissertation on flipped learning in Turkey were completed in 2014, and it was observed that most of the studies were completed in 2019 and then in 2020. This result is consistent with Karakaş (2021) and Doğan (2022). Rusnilawati et al. (2023) stated that the most work was done in 2020 and 2021. While graduate dissertation on this subject have increased compared to the previous year, the reason for the fluctuation seen since 2019 can be shown as the pandemic process as of March 2020. When the statistics of the National Thesis Center of the Council of Higher Education are examined, it is seen that while the

number of master's and doctoral dissertation completed in 2019 was 76519, this number was 40884 and 50039 in 2020 and 2021. (National Thesis Center of the Council of Higher Education, 2024). These data support the findings of the study.

There are more master's dissertations than doctorate dissertations in the program type. There are also studies that support this finding (Aydın & Demirer, 2017; Birgili et al., 2021; Ceylan & Hamzaoğlu, 2022; Doğan, 2022; Karakaş, 2021; Köse & Yüzüak, 2020). The reason for this may be that master's programs are generally more than doctoral programs when all fields are considered. When the statistics of the National Thesis Centre database of the Council of Higher Education are examined, it is seen that master's dissertations are generally more than doctoral dissertations (National Thesis Center of the Council of Higher Education, 2024). The reason for this can be considered as the fact that master's programs are generally more in number than doctoral programs when all fields are taken into consideration, and therefore the number of students enrolled in master's programs is higher than the number of students enrolled in doctoral programs.

Gazi University was identified as the institution where the highest number of graduate dissertations on flipped learning were completed. The same finding is also found in the study of Doğan (2022). According to the statistics of the National Thesis Centre database of the Council of Higher Education (2024), considering the total number of master's and doctoral dissertations completed in general, Gazi University ranks 2nd after Istanbul University (Istanbul University 41928, Gazi University 39947).

The highest number of graduate dissertations in Turkish was determined as the language of publication. Graduate dissertation with English or French as the language of publication are generally theses in the field of foreign language education. It is seen that most of the theses written in foreign language in the sample belong to the departments related to the field of Foreign Language. Considering the fact that the language of instruction at universities in Turkey is generally Turkish, the fact that the language of most of the graduate dissertations analyzed is Turkish is seen as usual.

It was determined that most of the graduate dissertation were carried out in the main sciences and disciplines affiliated with the Institute of Educational Sciences. This result is related to the institute structures of universities. It is also among the results that in some universities, as of 2019, the institutes have been merged as Institute of Graduate Studies.

It was observed that graduate dissertation was completed mostly in fields related to foreign language education. The disciplines of curriculum and instruction, computer education, and instructional technology education follow. When the disciplines of computer education, instructional technology, and educational technologies are evaluated together, they have the same frequency as foreign language education. Doğan (2022) stated that the highest number of studies were conducted in the disciplines of Computer Education and Instructional Technology Education, Curriculum and Instruction, and Foreign Language Education; Demirer and Aydın (2017) in Mathematics Education and Foreign Language Education; Özbay and Sarıca (2019) in Foreign Language Education; and Uluçınar Sağır and Sakar (2017) in Computer Science. The reason for this may be that most of the technical competence studies on the preparation of extracurricular materials (video etc.) are carried out in the fields related to Instructional Technologies.

5.2. Methodological characteristics

In the methodological examination of graduate dissertation on flipped learning, the mixed design was determined as the most common research method, followed by quantitative and qualitative designs, respectively. This finding aligns with previous studies (Doğan, 2022; Karakaş, 2021). In addition to studies stating that quantitative methods are used the most (Chen et. al., 2022; Özbey & Sarıca, 2019; Perez et al., 2023; Tunggyshbay et al., 2023), Özbey and Sarıca (2019) also noted a considerable increase in the use of mixed methods. Köse and Yüzak (2020) reported that quantitative methods were the most common, whereas (Demirer & Aydın, 2007; Yıldız et al., 2017) found that qualitative methods were more prevalent in their studies. The reason for this is that mixed methods bring together the features of both quantitative and qualitative designs.

Experimental design was the most often utilized research model, with case studies coming in second. There are also other studies stating that the experimental design was used the most. (Aydın & Demirer, 2017; Evans et al., 2019; Ezentaş & Karakaş, 2021; Köse & Yüzak, 2020). Among the experimental design types, the pre-test post-test control group design was observed as the most prevalent. The increasing use of the experimental design model in graduate dissertation might explain the preference for mixed methods and quantitative research.

The most common sample level in the research was determined to be at the secondary school level following university (Aydın & Demirer, 2017; Ceylan & Hamzaoğlu, 2022; Doğan, 2022; Karakaş, 2021; Özbay & Sarıca, 2019; Rusnilawati et al., 2023). Evans et al. (2019) stated that the most common sample level is graduate students. Ezentaş and Karakaş (2021) found that the secondary school level sample was most frequently chosen, possibly because researchers can more easily access university-level students. Studies also support that university-level students are more accessible (Altınpulluk, 2018; Ozan & Köse, 2014).

The sample group with a size of 1-50 is the most common. In the study of Karagöl and Esen (2019), it is stated that working in small groups is more effective. In studies employing experimental methods, it is important for the sample to consist of smaller groups. This enables closer attention to each student and facilitates more accurate observations. Therefore, it is thought that working with small groups is preferred in most of the studies.

It was observed that academic achievement test was used the most in quantitative data collection tools. There are studies supporting this finding (Ceylan & Hamzaoğlu, 2022; Özbay & Sarıca, 2019). After the academic achievement test, the most preferred measurement tools are attitude and motivation scales. It is known that the most widely used data collection tools to measure students' performance are achievement tests. It is known that achievement tests are the most widely used data collection tools to measure students' performance by revealing their level of understanding about a particular subject or concept (Kempa, 1986; Ogan Bekiroğlu, 2004). The choice of the achievement test as a quantitative data collection tool may be attributed to its frequent use as a dependent variable in experimental studies, where methods are tested to affect success.

It is seen that interview is the most preferred qualitative data collection technique. The studies of Doğan (2022) and Karakaş (2021) also support this finding. The interview technique is one of the most commonly used qualitative data collection methods. In-depth interviews are a versatile form of qualitative data collection used by researchers in social sciences as they allow individuals to explain in their own words how they understand and interpret the world around them (Knott et al., 2022). Additionally, semi-structured interviewing gives the researcher the autonomy to explore relevant ideas that may arise during the research (Adeoye-Olatunde & Olenik, 2021).

5.3. Analysis techniques characteristics

As a result of the analysis, it was determined that the t-test was the most commonly used statistical method. This result is consistent with Ezentaş and Karakaş (2021). The t-test stands out as one of the primary tests extensively used in the analysis of quantitative data in graduate dissertation on flipped learning. The prevalence of t-test analysis may be attributed to the common practice of employing simple statistical methods, with advanced statistical techniques being less frequently utilized.

Regarding the analysis of qualitative data, the content analysis method emerged as the most frequently employed. Content analysis is widely utilized in social sciences, particularly in educational sciences (Loomis et al., 2022; Ültay et al., 2017).

This study, which examined graduate dissertation on flipped learning between 2014 and 2023, has the potential for expansion by incorporating article data into the sample. The research findings are anticipated to provide valuable insights for future investigations.

Declarations

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Appendix 1. Dissertation's types used in the study.

Number	Author	Dissertation types	Number	Author	Dissertation types
1	Boyraz (2014)	Master	91	Kurtoğlu (2019)	Master
2	Demiralay (2014)	Doctoral	92	Koç Deniz (2019)	Doctoral
3	Gençer (2015)	Master	93	Söğüt (2019)	Master
4	Turan (2015)	Doctoral	94	Topan (2019)	Doctoral
5	Alsancak Sırakaya (2015)	Doctoral	95	Yağmur (2019)	Master
6	Çetin Köroğlu (2015)	Doctoral	96	Ökmen (2020)	Doctoral
7	Akgün (2015)	Master	97	Kaman (2020)	Master
8	Arı (2015)	Master	98	Kayan (2020)	Doctoral
9	Özdemir (2016)	Doctoral	99	Dinçer (2020)	Master
10	Yavuz (2016)	Master	100	Gündüz (2020)	Doctoral
11	Gök (2016)	Master	101	Tekin (2020)	Master
12	Aydın (2016)	Master	102	Demir (2020)	Master
13	Umutlu (2016)	Master	103	Aksoy (2020)	Master
14	Öztürk (2016)	Master	104	Yılmaz (2020)	Master
15	Çalışkan (2016)	Master	105	Keskin (2020)	Master
16	Çukurbaşı (2016)	Doctoral	106	Aydın (2020)	Master
17	Kanbur (2016)	Master	107	Yavuz (2020)	Master
18	Sağlam (2016)	Master	108	Taşkın (2020)	Doctoral
19	Topalak (2016)	Doctoral	109	Şerefli (2020)	Master
20	Ceylaner (2016)	Master	110	Girgin (2020)	Master
21	Aydın (2016)	Master	111	Çoşkun (2020)	Master
22	Çakır (2017)	Master	112	Pehlivan (2020)	Master
23	Ediş (2017)	Master	113	Yaşar (2020)	Master
24	Şenel (2017)	Master	114	Şahin (2020)	Master
25	Dönmez (2017)	Doctoral	115	Türkoğlu (2020)	Doctoral
26	Nayci (2017)	Doctoral	116	Çay (2020)	Master
27	Cibik (2017)	Master	117	İlter (2020)	Doctoral
28	Karaca (2017)	Doctoral	118	Darıyemez (2020)	Doctoral
29	Özdemir (2017)	Doctoral	119	Çakıroğlu (2020)	Master
30	Qader (2017)	Master	120	Özler (2020)	Master
31	Acar (2017)	Master	121	Özdemir (2020)	Master
32	Yıldız (2017)	Doctoral	122	Aslan (2020)	Doctoral
33	Tuna (2017)	Master	123	Tosun (2020)	Doctoral
34	İyitoğlu (2018)	Doctoral	124	Alkaya Karagöl (2020)	Master
35	Öztürk (2018)	Master	125	Özdeş (2020)	Doctoral
36	Özbilen (2018)	Master	126	Nacaroğlu (2020)	Doctoral
37	Kömeç (2018)	Master	127	Söndür (2020)	Doctoral
38	Bulut (2018)	Master	128	Şahin (2021)	Master
39	Erdem Çavdar (2018)	Master	129	Eser (2021)	Master
40	Öztürk (2018)	Doctoral	130	Solak (2021)	Master
41	Erdem (2018)	Master	131	Aksoy (2021)	Doctoral
42	Debbağ (2018)	Doctoral	132	Aziz (2021)	Master
43	Akçor (2018)	Master	133	Evrensel (2021)	Master
44	Karakurt (2018)	Master	134	Kaya (2021)	Master
45	Karaman (2018)	Master	135	Özçelik (2021)	Master
46	Güven Demir (2018)	Doctoral	136	Türkoğlu (2021)	Master
47	Özüdoğru (2018)	Doctoral	137	Gündoğan Önderöz (2021)	Master
48	Kırmızıoğlu (2018)	Master	138	Karaman (2021)	Master
49	Kaya (2018)	Doctoral	139	Yılmaz (2021)	Doctoral
50	Çevikbaş (2018)	Doctoral	140	Karakaş (2021)	Master
51	Erdoğan (2018)	Doctoral	141	Derin (2021)	Master
52	Gökdemir (2018)	Doctoral	142	Akı (2021)	Doctoral
53	Yurdagül (2018)	Doctoral	143	Taşci (2021)	Master
54	Kansızoğlu (2018)	Doctoral	144	Üstünbaş (2021)	Master
55	Dursunlar (2018)	Master	145	Koçak (2021)	Master
56	Kaptanoğlu (2018)	Master	146	Yıldız (2021)	Master
57	Bolatlı (2018)	Master	147	Coşkun (2021)	Master
58	Yüreğilli Göksu (2018)	Doctoral	148	Ünsal (2021)	Master

59	Ayçiçek (2018)	Doctoral	149	Şengün (2021)	Master
60	Tekin (2018)	Doctoral	150	Ercan (2021)	Master
61	Murat (2018)	Master	151	Ünlütürk (2022)	Master
62	Çalıcı (2019)	Master	152	Yu (2022)	Doctoral
63	Seçilmişoğlu (2019)	Master	153	Yılmaz (2022)	Master
64	Gürlüyer (2019)	Master	154	Ünlü (2022)	Master
65	Akdeniz (2019)	Master	155	Nergiz (2022)	Doctoral
66	Sönmez (2019)	Master	156	Doğan (2022)	Master
67	Koçak (2019)	Master	157	Türk (2022)	Master
68	Alpat (2019)	Master	158	Tetik (2022)	Doctoral
69	Tulay (2019)	Master	159	Özkan (2022)	Doctoral
70	Bulut (2019)	Master	160	Özben (2022)	Master
71	Erbil (2019)	Doctoral	161	İnce (2022)	Master
72	Çakar (2019)	Master	162	Öz (2022)	Master
73	Özkal (2019)	Master	163	Karadoğan (2022)	Master
74	Şahin (2019)	Master	164	Doğru (2022)	Master
75	Aydemir (2019)	Doctoral	165	Bektaş Esen (2022)	Doctoral
76	Karagöz (2019)	Master	166	Acar (2022)	Master
77	Kalafat (2019)	Master	167	Ukzuzoğlu (2023)	Master
78	Akbulut (2019)	Master	168	Kiraz (2023)	Master
79	Turan (2019).	Master	169	Oğurlu (2023)	Doctoral
80	Uzun (2019).	Master	170	Erkan (2023)	Master
81	Erensayın (2019).	Master	171	Çınar (2023)	Doctoral
82	Özdemir (2019).	Master	172	Doğdu (2023)	Master
83	İnciman Çelik (2019).	Master	173	Yıldız (2023)	Doctoral
84	Duman (2019).	Doctoral	174	Oğuz (2023)	Master
85	Özdemir (2019).	Master	175	Türk (2023)	Master
86	Şık (2019)	Master	176	Taşkıran (2023)	Master
87	Yılmaz (2019)	Doctoral	177	Çiftci Aksoy (2023)	Master
88	Perçin (2019)	Master			
89	Bursa (2019)	Doctoral			
90	Fidan (2019)	Master			

Appendix 2. Dissertations used in the study.

Acar E. (2017). *Muhasebe eğitiminde modern yaklaşımlar: ters yüz edilmiş sınıf modeli ve öğrencilerin yaklaşımı [Modern approaches in accounting education: flipped classroom model and students' approach]* [Unpublished master's thesis]. Bülent Ecevit University.

Acar Z. (2022). *Pandemi dönemi uzaktan eğitim sürecinde ters yüz öğrenme modeli ile matematik öğretimi [Mathematics teaching with flipped classroom model in the distance education during the pandemic]* [Unpublished master's thesis]. Tokat Gaziosmanpaşa University.

Akbulut F. (2019). *Ters yüz öğrenme modeline yönelik akademisyen görüşleri [Opinions of academics about the flipped learning model]* [Unpublished master's thesis]. Süleyman Demirel University.

Akçor G. (2018). *Hizmet öncesi İngilizce öğretmenlerinin ters-yüz sınıf modeli hakkında görüşleri [Exploring the perceptions of pre-service English language teachers of flipped classroom]* [Unpublished master's thesis]. Hacettepe University.

Akdeniz E. (2019). *Ters yüz sınıf modelinin akademik başarı, tutum ve kalıcılık üzerine etkisi [The impact of flipped classroom model on academic achievement, attitude and persistence]* [Unpublished master's thesis]. Necmettin Erbakan University.

Akgün M. (2015). *Ters-düz sınıfların öğrencilerin akademik başarısına ve görüşlerine etkisi [The effect of flipped classroom on students' academic achievement and views]* [Unpublished master's thesis]. Fırat University.

Akı F. N. (2021). *Ters yüz sınıf yaklaşımının mühendislik fakültesi öğrencileriyle iki farklı grupta incelenmesi [Investigation of the flipped classroom approach with engineering students in two different groups]* [Unpublished doctoral thesis]. Marmara University.

Aksoy B. (2021). *Hemşirelik eğitiminde ters yüz öğrenme modelinin öğrencilerin güdülenme ve öğrenme stratejileri üzerine etkisi [The effect of flipped learning model in nursing education on motivation and learning strategies of students]* [Unpublished doctoral thesis]. Trakya University.

Aksoy İ. (2020). *Ortaokul fen öğretiminde ters yüz sınıf uygulamaları [Flipped classroom applications in secondary science teaching]* [Unpublished master's thesis]. Kastamonu University.

Alkaya Karagöl E. (2020). *Ters yüz sınıf modelinin akademik başarı, akademik motivasyon ve bilişsel kapılma üzerindeki etkisinin incelenmesi [The effects of flipped classroom model on academic achievement, academic motivation and cognitive absorption]* [Unpublished master's thesis]. Sakarya University.

Alpat M. F. (2019). *Flipped learning destekli eleştirel düşünme eğitiminin İngilizceyi yabancı dil olarak öğrenen Türk öğrencilerin eleştirel düşünme eğilim seviyelerini ve İngilizce yazma becerilerine etkileri [The effect of flipped learning-supported critical thinking instruction on the critical disposition and L2 writing skills]* [Unpublished master's thesis]. İstanbul Sabahattin Zaim University.

Alsancak Sırakaya D. (2015) *Tersyüz sınıf modelinin akademik başarı, öz-yönetimli öğrenme hazırbulunuşluğu ve motivasyon üzerine etkisi [The effect of flipped classroom model on academic achievement, self-directed learning readiness and motivation]* [Unpublished doctoral thesis]. Gazi University.

Arı H. (2015). *Bir okul öncesi özel eğitim kurumunda tersine kaynaştırma uygulamasının ve ilkokula hazırlığa etkilerinin incelenmesi [A case study of reverse inclusion practice and its effects on primary school readiness in a pre-school special education institute]* [Unpublished master's thesis]. Necmettin Erbakan University.

Aslan A. (2020). *Eğitim Bilişim Ağı (EBA) destekli Ters Yüz Edilmiş Sınıf (TYS) modelinin 9. sınıf coğrafya dersi beşeri sistemler ünitesinin öğretim sürecine etkileri [The effects of Flipped Classroom (FC) model supported by Educational Information Network (EIN) on teaching process of 9th grade geography course human systems unit]* [Unpublished doctoral thesis]. Atatürk University.

Ayçiçek B. (2018). *Teknoloji destekli ters yüz sınıf modeli uygulamalarının İngilizce öğretiminde lise öğrencilerinin derse katılımları, akademik başarıları ve sınıf yaşamı algıları üzerindeki etkisinin incelenmesi [An investigation of technology-enhanced flipped classroom model applications effect on high school students' classroom engagement, academic achievement and classroom life perceptions in teaching English]* [Unpublished doctoral thesis]. Mersin University.

Aydemir E. (2019). *Ters-yüz edilmiş sınıf ortamının İngilizce öğretmenliği bölümünde okuyan öğretmen adaylarının ileri okuma ve yazma becerileri, öğrenmede öz-düzenleme becerileri ve sınıf içi etkileşimleri üzerine etkisi [The impact of flipped classroom approach on the reading and writing achievement, self-regulated learning, and classroom interaction of pre-service English teachers]* [Unpublished doctoral thesis]. Bahçeşehir University.

Aydın B. (2016). *Ters yüz sınıf modelinin akademik başarı, ödev/görev stres düzeyi ve öğrenme transferi üzerindeki etkisi [The effects of flipped classroom model on academic achievement, homework/task stress level and transfer of learning]* [Unpublished master's thesis]. Süleyman Demirel University.

Aydın G. (2016). *Ters yüz sınıf modelinin üniversite öğrencilerinin programlamaya yönelik tutum, öz-yeterlik algısı ve başarılarına etkisinin incelenmesi [The investigation of the effect of flipped classroom model on undergraduate students attitude, self-efficacy and academic achievement towards programming]* [Unpublished master's thesis]. Dokuz Eylül University.

Aydın H. (2020). *Ters-yüz edilmiş sınıf modelinin tam sayılarda işlemler konusunun öğreniminde akademik başarıya etkisi [The effect of flipped classroom model on academic success in teaching the operations with integer numbers]* [Unpublished master's thesis]. Atatürk University.

Aziz S. K. (2021). *Ters yüz öğrenme modelinin biyoloji konularını öğrenmeye etkisi: Mitokondri ve kloroplast örneği [Effect of flipped learning model on learning biology subjects: Mitochondria and chloroplast example]* [Unpublished master's thesis]. Hacettepe University.

Bektaş Esen E. (2022). *Ortaokul 7. sınıf kuvvet ve enerji ünitesinin ters yüz sınıf modeli ile öğretiminde öğrencilerin 21. yüzyıl becerilerinin gelişiminin değerlendirilmesi [Evaluation of students' 21st century skills development in teaching middle school 7th grade force and energy unit with flipped classroom model]* [Unpublished doctoral thesis]. Trabzon University.

Bolatlı Z. (2018). *Mobil uygulama ile desteklenmiş ters-yüz öğretim ortamı kullanan öğrencilerin akademik başarılarının ve işbirlikli öğrenmeye yönelik görüşlerin incelenmesi [Determining the academic achievement of students who use flipped classroom method supported by mobile application and their views on cooperative learning]* [Unpublished master's thesis]. Selçuk University.

Boyraz S. (2014). *İngilizce öğretiminde tersine eğitim uygulamasının değerlendirilmesi [Evaluating flipped classroom/education method in English teaching]* [Unpublished master's thesis]. Afyon Kocatepe University.

Bulut C. (2018). *Ters yüz sınıf modelinin EFL öğrenicilerinin gramer başarımları üzerindeki etkisi: Sadece tersine çevirme değil, (Halihazırda) olanla bütünleştirme [Impact of flipped classroom model on EFL learners' grammar achievement: not only inversion, but also integration]* [Unpublished master's thesis]. Yeditepe University.

Bulut R. (2019). *Oran-orantı konusunun öğretiminde ters yüz sınıf modelinin etkisinin incelenmesi [Investigation of the use of the flipped classroom model in teaching the ratio-proportion]* [Unpublished master's thesis]. Erzincan Binali Yıldırım University.

Bursa S. (2019). *Sosyal bilgiler dersinde ters-yüz sınıf uygulamalarının öğrencilerin akademik başarı ve sorumluluk düzeylerine etkisi [The effect of flipped classroom practices on students' academic achievement and responsibility levels in social studies course]* [Unpublished doctoral thesis]. Anadolu University.

Çakar V. (2019). *Fizik eğitiminde ters yüz edilmiş sınıf modelinin kullanılmasının öğrenme ürünleri üzerine etkisi [The effect of using flipped classroom model in physics on learning products]* [Unpublished master's thesis]. Zonguldak Bülent Ecevit University.

Çakır E. (2017). *Ters yüz sınıf uygulamalarının fen bilimleri 7. sınıf öğrencilerinin akademik başarı, zihinsel risk alma ve bilgisayarca düşünme becerileri üzerine etkisi [The effect of flipped classroom on 7th grade students' academic achievement, cognitive risk taking skills and computational thinking skills in science education classroom]* [Unpublished master's thesis]. Ondokuz Mayıs University.

Çakıroğlu N. (2020). *8. sınıf matematik dersinde kullanılan ters yüz sınıf uygulamalarına ilişkin öğrenci deneyim ve görüşleri [Student experiences and opinions about the flipped classroom practice used in the 8th grade mathematics course]* [Unpublished master's thesis]. Zonguldak Bülent Ecevit University.

Çalıcı Z. (2019). *Ters yüz sınıf yönteminin 6. sınıf öğrencilerinin dinlediğini anlama becerisine etkisi [The effect of flipped classroom method on the listening comprehension ability of 6th grade students]* [Unpublished master's thesis]. Yıldız Technical University.

Çalışkan N. (2016). *Tersine eğitimin İngilizceyi yabancı dil olanlara öğrenen öğrencilerin üzerindeki etkisi [Examining the influence of flipped classroom on students learning English as a foreign language]* [Unpublished master's thesis]. Çağ University.

Çay T. (2020). *Ters yüz edilmiş sınıf yönteminin İngilizce hazırlık sınıfı öğrencilerinin özerklik algıları ve dilbilgisi öğrenmeye yönelik tutumlarına etkisi [The effect of flipped classroom on English preparatory students' autonomous perceptions and attitudes towards learning grammar]* [Unpublished master's thesis]. Mersin University.

Çetin Köroğlu Z. (2015) *Tersten yapılandırılmış öğretimin İngilizce öğretmen adaylarının konuşma becerilerinin geliştirilmesine etkileri [The effects of flipped instruction on pre-service English language teachers' speaking skills development]* [Unpublished doctoral thesis]. Gazi University.

Çevikbaş M. (2018). *Ters-yüz sınıf modeli uygulamalarına dayalı bir matematik sınıfındaki öğrenci katılım sürecinin incelenmesi [Investigation of the student engagement process in a mathematics class based on flipped classroom practices]* [Unpublished doctoral thesis]. Gazi University

Ceylaner S. (2016). *Dokuzuncu sınıf İngilizce öğretiminde ters yüz sınıf yönteminin öğrencilerin öz yönetimli öğrenmeye hazır bulunuşluklarına ve İngilizce dersine yönelik tutumlarına etkisi [Effects of flipped classroom on students' self- directed learning readiness and attitudes towards English lesson in 9th grade English language teaching]* [Unpublished master's thesis]. Mersin University.

Çibik B. (2017). *Tersyüz eğitim modelinin öğrenen özerkliği üzerine etkileri [The effects of flipped classroom model on learner autonomy]* [Unpublished master's thesis]. Muğla Sıtkı Koçman University.

Çiftci Aksoy B. N. (2023). *Ters yüz eğitim modelinin İngilizceyi yabancı dil olarak öğrenen öğrencilerin özerklikleri ve motivasyonları üzerine etkisi [The effects of flipped classroom on EFL students' autonomy and motivation]* [Unpublished master's thesis]. Atatürk University.

Çınar M. (2023). *İlkokul 4. sınıf matematik dersinde ters yüz sınıf modelinin öğrencilerin akademik başarı ve motivasyonuna etkisinin incelenmesi [Examination of the effect of flipped classroom model on students' academic achievement and motivation in primary school 4th grade mathematics lesson]* [Unpublished doctoral thesis]. Fırat University.

Çoşkun G. (2020). *Ters yüz eğitim modeliyle STEM etkinliklerinin fen bilgisi öğretmen adaylarının öz yeterlik inançlarına ve STEM eğitim yaklaşımına yönelik etkisi [The effect of STEM activities with flipped learning model onself-efficacy beliefs and STEM education approaches of prospective science teachers]* [Unpublished master's thesis]. Akdeniz University.

Coşkun H. (2021). *7. sınıf kuvvet ve enerji ünitesinde Ters Yüz Sınıf Modeli destekli FeTeMM yaklaşımına dayalı tasarlanan öğrenme ortamının başarı ve motivasyona etkisi [The effect of the Flipped Classroom Model-supported STEM learning environment on achievement and motivation in the 7th-grade force and energy unit]* [Unpublished master's thesis]. Uşak University.

Çukurbaşı B. (2016). *Ters yüz edilmiş sınıf modeli ve lego-logo uygulamaları ile desteklenmiş probleme dayalı öğretim uygulamalarının lise öğrencilerinin başarı ve motivasyonlarına etkisi [Examine the effect of the problem based learning activities supported via flipped classroom and LEGO-LOGO practices on the high school students' success and their motivation]* [Unpublished doctoral thesis]. Sakarya University.

Darıyemez T. (2020). *Konuşma becerilerinin ters yüz sınıf modeliyle öğretilmesinin yabancı dil olarak İngilizce öğrenen öğrencilerin özerklik, iletişim kurma istekliliği ve konuşma kaygısı üzerine etkileri [The effects of teaching speaking skills through flipped classroom on EFL students' autonomy, willingness to communicate and speaking anxiety]* [Unpublished doctoral thesis]. Atatürk University.

Debbağ M. (2018). *Öğretim ilke ve yöntemleri dersi öğretim programı için hazırlanan tersyüz edilmiş sınıf modelinin etkililiği [The effectiveness of the flipped classroom model designed for teaching principles and methods course curriculum]* [Unpublished doctoral thesis]. Bolu Abant İzzet Baysal University.

Demir E. (2020). *5. sınıf fen bilimleri dersi insan ve çevre ünitesinde ters yüz sınıf uygulamalarının çevre bilincine etkisinin incelenmesi [Analyzing of effects of flipped classroom practices on environmental consciousness in the fifth grade sciences lesson human and environment unit]* [Unpublished master's thesis]. Kastamonu University.

Demiralay R. (2014) *Evde ders okulda ödev modelinin benimsenmesi sürecinin yeniliğin yayılımı kuramı çerçevesinde incelenmesi [Examining the process of flipped classroom model acceptance in the context of diffusion of innovations theory]* [Unpublished doctoral thesis]. Gazi University.

Derin S. (2021). *Madde ve endüstri ünitesinde gerçekleştirilen ters yüz edilmiş sınıf modelinin 8.sınıf öğrencilerinin öğrenmeyi öğrenme yetkinlikleri açısından incelenmesi [Examination of the flipped classroom model performed in the matter and industry unit in terms of 8th grade students' learning to learn competencies]* [Unpublished master's thesis]. Eskişehir Osmangazi University.

Dinçer N. (2020). *Ters-yüz edilmiş öğrenim modelinin İngilizceyi yabancı dil olarak öğrenen öğrencilerin dilbilgisi yeterliliği ve öğrenen özerkliği üzerine etkileri [The effects of flipped learning model on EFL students' grammar proficiency and learner autonomy]* [Unpublished master's thesis]. Bahçeşehir University.

Doğan M. (2022). *Türkiye'de gerçekleştirilen ters yüz edilmiş sınıfa yönelik tez çalışmalarının bibliyometrik analizi [Bibliometric analysis of thesis studies on the flipped class carried in Turkey]* [Unpublished master's thesis]. Süleyman Demirel University.

Doğdu N. (2023). *Sanal gerçeklik destekli ters yüz öğrenme modelinin uygulanması: Güneş Sistemi ve Ötesi ünitesi örneği [Application of virtual reality supported flipped learning model: Example of Solar System and Beyond unit]* [Unpublished master's thesis]. Van Yüzüncü Yıl University.

Doğru E. (2022). *Uzaktan eğitimde alternatif bir öğretim yaklaşımı olarak çevrimiçi ters yüz öğrenme modelinin ortaokul öğrencilerine etkisi [The effect of the online reverse face learning model on secondary students as an alternative teaching approach in distance education]* [Unpublished master's thesis]. Kahramanmaraş Sütçü İmam University.

Dönmez F. İ. (2017). *Öğretim elemanlarının web 2.0 teknolojileri kullanımlarına yönelik tersine mesleki gelişim programının tasarlanması ve uygulanması [The design and implementation of flipped professional development for advancing use of web 2.0 technologies of faculty members']* [Unpublished doctoral thesis]. Anadolu University.

Duman İ. (2019). *Etkinlik temelli öğrenmeye dayalı ters yüz edilmiş sınıf modelinin öğrencilerin akademik başarı ve öğrenme motivasyonlarına etkisi [The effect of flipped classroom model incorporating activity-based learning on students' academic achievement and learning motivation]* [Unpublished doctoral thesis]. Sakarya University.

Dursunlar E. (2018). *Ters yüz sınıf modelinin 7. sınıf sosyal bilgiler dersi yaşayan demokrasi ünitesinde öğrencilerin akademik başarısına etkisi [The effect of flipped classroom on academic success of seventh social studies grade students about living democracy unit]* [Unpublished master's thesis]. Atatürk University.

Ediş S. (2017). *İngilizce dil öğrencilerinin öğrenen özerkliğini pekiştirmek için tersine yapılandırılmış öğrenme modeli [Flipped instruction for English language learners to enhance learner autonomy]* [Unpublished master's thesis]. Gazi University.

Erbil D. G. (2019). *Tersine çevrilmiş sınıf ortamında işbirlikli öğrenme yönteminin akademik başarı ve psikososyal değişkenler üzerindeki etkisi [The effects of cooperative learning applied in flipped classroom on academic achievement and psychosocial variables]* [Unpublished doctoral thesis]. Dokuz Eylül University.

Ercan G. P. (2021). *Yükseköğrenimde yabancı dil olarak İngilizce öğretiminde ters-yüz öğrenme modelinin öğretmen ve öğrenci tarafından algılanan kullanışlığı [Perceived usefulness of flipped learning in the EFL context in higher education: Teachers' and learners' perspectives]* [Unpublished master's thesis]. İstanbul Medeniyet University.

Erdem Çavdar Ö. (2018). *Ters yüz sınıf yaklaşımının geleneksel İngilizce dersi ile bütünleştirilmesi [Integrating flipped classroom approach into traditional English class]* [Unpublished master's thesis]. Karadeniz Technical University.

Erdem E. (2018). *Blok tabanlı ortamlarda programlama öğretimi sürecinde farklı öğretim stratejilerinin çeşitli değişkenler açısından incelenmesi [The investigation of different teaching strategies during teaching programming process in block based environment in terms of different factors]* [Unpublished master's thesis]. Başkent University.

Erdoğan E. (2018). *Sosyal bilgiler öğretiminde ters yüz edilmiş sınıf modelinin kullanımı [The use of flipped classroom model in social studies teaching]* [Unpublished doctoral thesis]. Gazi University

Erensayın E. (2019). *Ters yüz sınıf modelinin ortaöğretim düzeyinde uygulanabilirliğinin öğretmen algılarına göre incelenmesi [Examining the applicability of the flipped class room model in secondary education according to teacher perceptions]* [Unpublished master's thesis]. Van Yüzüncü Yıl University.

Erkan H. (2023). *Ters yüz öğrenme modeli ile yürütülen STEM etkinliklerinin ilkokul 4. sınıf öğrencilerinin bilimsel yaratıcılık, STEM tutum ve STEM algıları üzerine etkisi [The effect of STEM activities conducted with the reverse face learning model on scientific creativity, STEM attitudes and STEM perceptions of primary school 4th student]* [Unpublished master's thesis]. Giresun University.

Eser N. (2021). *Ters çevrilmiş sınıf modelinin 7. sınıf öğrencilerin öz düzenleme becerileri üzerine etkisi [The effect of flipped classroom on self-regulation skills of 7th grade students]* [Unpublished master's thesis]. Mersin University.

Evrensel B. (2021). *Sosyal bilgiler dersinde tersyüz öğrenme modelinin Eğitim Bilişim Ağı destekli kullanımının değerlendirilmesi [The evaluation of the usage of flipped learning method supported by Educational Informatics Network in social studies]* [Unpublished master's thesis]. İstanbul University- Cerrahpaşa.

Fidan G. (2019). *Beşinci sınıf bilişim teknolojileri ve yazılım dersi etik ve güvenlik ünitesinin ters-yüz öğrenme ve oyunlaştırma yaklaşımları ile öğretimi [Teaching of ethics and security unit with the approach of flipped learning and gamification in the fifth grade information technologies and software course]* [Unpublished master's thesis]. Balıkesir University.

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