

AN ANALYSIS OF MASTER'S AND DOCTORAL RESEARCH ON FLIPPED INSTRUCTION IN TURKEY (*)

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Abstract

Flipped learning has been one of the most popular trends in education in the last decade. History of flipped learning dates back to 2007 when two chemistry teachers in the USA recorded videos and screencast them for enabling their students to compensate for the lessons they missed. Flipped learning emphasizes effective use of class time by changing the traditional task of teachers and students inside and outside the classroom. In flipped learning, students' roles as passive lecture listeners change to active participants in classroom activities. As its name suggests, flipping takes the presentation or lecture part which is traditionally done in the classroom and places that in pre-class work. It can be considered as a pedagogical model in which the typical lecture and homework elements of a course are reversed. Subsequent to the first implementation of this new instructional model, a lot of institutions have started to integrate the model into their education systems and research on flipped learning has begun to gain popularity. This study aims to analyse master's and doctoral research on flipped learning conducted in Turkey. As data collection tool, document analysis method was used in the study. To this end, some key words related to flipped learning were searched in the data base of National Thesis Center (NTC) provided by the Council of Higher Education. It was found that 57 master's and 31 doctoral research was conducted in different disciplines between the years of 2014 and 2019 in Turkey. The scope of majority of these studies was usually based on determining students' attitudes, perceptions, academic achievements, and self-efficacy beliefs. Some studies focused on the contribution of flipped learning to learners' development of 21st century skills as well as to general competence levels. The study

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also found that flipped learning was implemented in a wide range of disciplines such as history, chemistry, music, science education, social studies, accounting education, medical studies, and foreign language education which constituted the greatest proportion of the current academic research in Turkey.

Keywords: Flipped Learning, Master, Doctoral Studies, Academic Research, Dissertations.

Tersten Yapılandırılmış Öğrenme Yöntemiyle ilgili Türkiye’de Yapılmış Yüksek Lisans ve Doktora Çalışmalarının Bir Analizi

Öz

Tersten yapılandırılmış öğrenme (ters yüz öğrenme)son on yılda eğitim alanında görülen en popüler yöntemlerden birisidir. Tersten yapılandırılmış öğrenmenin tarihi 2007 yılına dayanır. Amerika’da iki kimya öğretmeni dersleri çeşitli sebeplerle kaçırın öğrenciler için videolarını kaydedip yayınladılar. Tersten yapılandırılmış öğrenme öğretmen ve öğrencilerin alışlagelmiş sınıf içi ve sınıf dışı rollerini değiştirerek sınıf içi zamanı daha etkin kullanabilmeyi hedefler. Pasif olarak sınıfta yer alan öğrenciler bu yöntemde artık derse aktif katılım sağlarlar. İsminden de anlaşılacağı üzere tersten yapılandırılmış öğrenmede alışlagelmiş olan sınıf içinde öğretmenin konuyu anlattığı sunum kısmı artık dersten önce öğrencilerin videolar üzerinden halledecekleri bir durum haline almıştır. Yani bu yöntemle öğrenciler evde ödev yapacakları yerde öğretmenlerinin ders videolarını izlerler sınıfta ise ödev, daha çok alıştırma, etkinlik gibi daha aktif öğrenme ortamlarında bulunurlar. Bu yöntemin Amerika’da ilk uygulamasında sonra birçok kurum yöntemi eğitim sistemlerine dâhil etmiş ve bu alanla ilgili araştırmalarda da artış başlamıştır. Bu çalışma tersten yapılandırılmış öğrenme yöntemini baz alan Türkiye’ yapılmış yüksek lisans ve doktora çalışmalarının bir analizini yapmayı hedeflemektedir. Çalışmada veri toplama aracı olarak doküman analizi yöntemi kullanılmıştır. Bu amaçla, Yüksek Öğrenim Kurumu’nun Ulusal tez merkezi veri tabanında yöntemle ilgili bazı anahtar kelimeler taranmıştır. Araştırma sonucunda Türkiye’de bu yöntem ile ilgili 2014-2019 yılları arasında farklı disiplinlerde yapılmış 57 yüksek lisans, 31 doktora tezine ulaşılmıştır. Çalışmaların büyük bir çoğunluğunun amacının tersten yapılandırılmış yöntemin öğrenci başarıları, tutumları, algıları ve öz yeterlik inançlarına katkısını incelemek olduğu sonucuna varılmıştır. Bazı çalışmalar bu yöntemin öğrencilerin genel becerilerinin yanında 21. Yüzyıl becerilerine katkısını araştırmışlardır. Çalışma sonunda tersten yapılandırılmış öğrenmenin tarih, kimya, sağlık, fen, sosyal, müzik ve yabancı dil öğretimi gibi çok farklı disiplinlerde yapılan tezlerde yer aldığı sonucuna da varılmıştır. Türkiye’deki bu alanlarda yapılan çalışmalar ise en çok yabancı dil öğretimi alanındaki tezlerde kendini göstermiştir.

Anahtar Kelimeler: Tersten Yapılandırılmış Öğrenme, Yüksek Lisans, Doktora, Akademik Çalışma, Tez Çalışmaları.

1. Introduction

Flipped learning is a type of blended learning and can be regarded as a relatively new pedagogical technique in which traditional classroom-based learning is inverted. The term 'flipped' refers to the replacement of what is conventionally done in the classroom, *lecture*, with what is done at home, *homework*. Since the advent of the term to the related literature, there have been several definitions. The Flipped Learning Network (FLN) has suggested a formal definition to counter some misconceptions about the term. FLN defines flipped learning as;

... a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter (FLN, 2014).

As the definition makes it clear, individual, dynamic and interactive learning environment is emphasized in flipped learning. The instructor serves as a guide and facilitator who makes the learning process easier as much as possible. The concepts 'Flipped Learning' and 'Flipped Classroom' are usually used interchangeably; however, the founders of FLN differentiate between these two terms. Flipped classroom refers to teachers' actions trying to make students study outside of the classroom by getting them to watch video lectures and supplying them through various materials. Flipped classroom can lead to flipped learning, but four pillars of flipped learning are of utmost importance if teachers really want to apply flipped learning. These four important components of flipped learning are explicated by the founders of FLN as follows;

Flexible environment is the first pillar of flipped learning in which teachers are expected to establish spaces and time frames allowing students to reflect on their learning when necessary. Students' progress is constantly monitored for necessary adjustments in case some problems may arise during the process. Students are provided various ways of learning content with maximum flexibility in time and place. Learning culture as a second pillar of flipped learning refers to student-centred learning environments. Conventional teacher-led classes are transformed to learning-centred ones in which students are expected to be actively involved in the process. Thus, class time is devoted to exploring topics in a more detailed way. Students are provided with more learning opportunities and they can evaluate their own learning. Intentional content which is the third pillar of flipped learning is related to determining what students really need and how active learning process should be supported. Professional educator regarded as the last pillar of flipped learning refers to the constant observation of the learning process by teachers. Teachers provide students with feedback whenever they need and evaluate their work. They are reflective in their practice and formative assessment is quite important. Collaboration and cooperation with other teachers is also attached great importance in flipped learning (FLN, 2014). As stated earlier, teachers can easily flip their classroom by having students

read text outside the classroom and prepare them video lectures. However, what is crucial is whether classroom time is used effectively considering the above-stated four pillars of flipped learning and whether teachers incorporate them in the learning process.

The first implementation of flipped learning dates back to 2007 when two chemistry teachers in Colorado, Jonathon Bergmann and Aaron Sams began recording videos and screencasting in order to compensate for the lessons their students missed because of some competitions and other events. They created videos of their lectures and posted them online for their Chemistry and Advanced Placement Chemistry classes during 2007-2008 school year. They required the students to take notes on the videos and come to class with one thoughtful question to ask and share. Subsequent to the change in the way of instruction, they reported that students began interacting more in the class and time could be used more efficiently and flexibly. They found that this new technique allowed them to spend much more time with students and to provide them with immediate feedback when needed (Ekmekçi, 2014).

Besides the numerous benefits of flipped learning, there are some drawbacks resulting from technology-related problems, lack of motivation and time. Considering the recent technological developments, technology-related problems seem not to be bothering both students and teachers now as were the case in the past. However, there may be some schools and districts where internet connection can be a problem. Another possible problem is that students who are accustomed to the traditional instructional techniques may have difficulties in adapting the new system in which they are partly responsible for their own learning at home. This may lead to some motivation-related problems in the process. As for the time-related problems, the flipped instruction ultimately saves teachers time. However, setting up the first flipped class will certainly take time and energy and for this reason, teachers may be reluctant to initiate the system and regard the new technique as a burden.

A lot of studies based on flipped learning and classrooms were conducted both in Turkey and in the world. As for the studies in Turkey, Tütüncü and Aksu (2018), in their systematic review article, reviewed 38 studies; 27 research articles, 9 MA theses, and 2 PhD dissertations. They reported that 30 studies were conducted in higher education context, four in the secondary school and four in the primary school context. The reviewed studies usually focus on students' achievement, motivation, attitudes, perceptions, and views towards flipped learning. It was also reported that most of the studies compared flipped learning with the traditional instructional techniques and revealed that flipped learning provides more flexible learning environments and students were more motivated and successful in the flipped classrooms. Similarly, Kozikoğlu (2019) analyzed 34 studies in Turkey and 46 studies conducted abroad about flipped learning model from various perspectives. The study reported that the number of studies about flipped learning has increased in recent years, and in the majority of the studies, the mostly preferred method and design were found to be mixed method and experimental design. As data collection tools, achievement tests, interview form and survey were mostly used in the studies.

In addition, one of the recent review studies was conducted by Turan and Akdağ-Çimen (2019) who investigated the trends and findings of the flipped classroom-related studies in English Language Teaching (ELT) field. They analysed 43 articles and found that the flipped classroom method in ELT gained popularity among researchers after 2014. Most commonly used research methods were found to be mixed and quantitative methods. The studies mainly focused on speaking and writing skills and mostly pointed to the benefits of the flipped classroom.

Although the studies on flipped learning have been increasing in number since 2014 both in Turkey and abroad, the current literature suggests that more studies should be carried out for uncovering the possible benefits of flipped learning as an instructional model for all language skills. Articles investigating the flipped learning were reviewed by above-mentioned studies, however, the review of MA and PhD studies on flipped learning in Turkey have remained untouched so far. Therefore, the current study aims to analyse MA and PhD studies conducted in Turkey so as to fill the gap in literature. The study tries to respond the following research question;

Research Question 1 (RQ1): What are the trends in MA and PhD dissertations about flipped learning in Turkey?

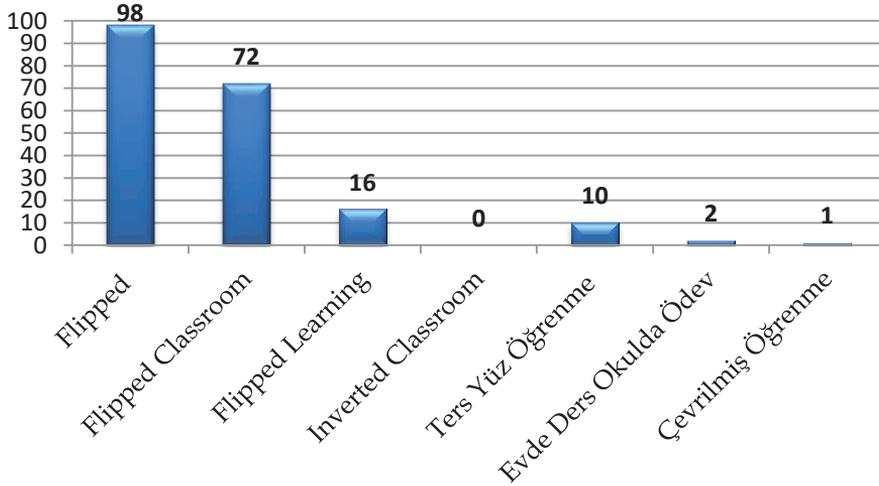
Research Question 2 (RQ2): What are the main findings in MA and PhD dissertations about flipped learning in Turkey?

2. Methodology

The study uses document analysis as a qualitative research method which is defined by Bowen (2009) as ‘a systematic procedure for reviewing or evaluating documents—both printed and electronic (computer-based and Internet-transmitted) material (p. 27). Bowen (2009) states that document analysis consists of skimming, reading and interpretation. Content analysis which is an important part of document analysis is the process of organising information into categories in relation with the research questions.

2.1. Data Collection

In order to determine the theses to be reviewed, a search was conducted in the National Thesis Center (NTC) provided by the Council of Higher Education on October 11, 2019. The search terms used included ‘flipped’, ‘flipped learning’, ‘flipped classroom’, ‘inverted classroom’, ‘ters yüz öğrenme’, ‘çevrilmiş öğrenme’, and ‘evde ders okulda ödev’. The following graph indicates the frequency of each term which was found as a result of detailed search in the database;



Graph 1. Frequency of key words-based detailed search.

When the detailed search results examined, it was found that the search term ‘flipped’ covered all other terms because the detailed search was primarily conducted in the abstracts and key words of the theses registered in the database. Each thesis based on flipped learning included ‘flipped’ in the abstracts which means the search with the key word ‘flipped’ covered all other search results with other key terms which was proved through cross check. For this reason, 98 theses found as a result of the first detailed search were decided to be included in the initial review process.

2.2. Data Analysis

In the data analysis process, the determined theses were downloaded and content analysis method which permits the researcher to compare, contrast, and categorize the data was initiated. To this end, a Word document form was created and data in relation with the research questions were written randomly. In this process, 18 theses out of 98 were excluded from the study because 10 were unrelated and out of the scope of the study. Five MA theses and three PhD theses were not reached as these theses were under embargo until a certain date at the request of the authors.

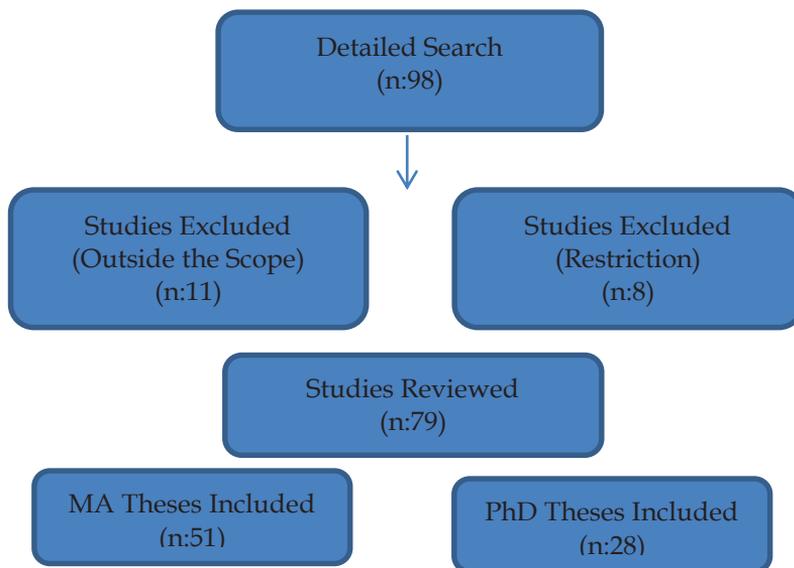


Figure 1. Diagram indicating the elimination process.

While analysing the selected theses, some sub-categories in relation with the research questions were taken into consideration. The following table shows these sub-categories utilized in the process of analysis.

Table 1. Sub-categories Utilized in the Process of Analysis

Research Question	Subcategories
RQ1. What are the trends in MA and PhD dissertations about flipped learning in Turkey?	<p>Context of Study: Each thesis was analysed in terms of the main field they belonged to.</p> <p>Research Methods: Analysing the methodology of the theses, each thesis was categorized under the headings of qualitative, quantitative, and mixed.</p> <p>Distribution of theses by Year: The selected theses were analysed in terms of their year of submission.</p> <p>Participants: The participants of each thesis were categorized.</p>
RQ2. What are the main findings in MA and PhD dissertations about flipped learning in Turkey?	<p>Effectiveness of Flipping: Based on the main findings of the theses, discussion and conclusion parts of the theses were analysed.</p>

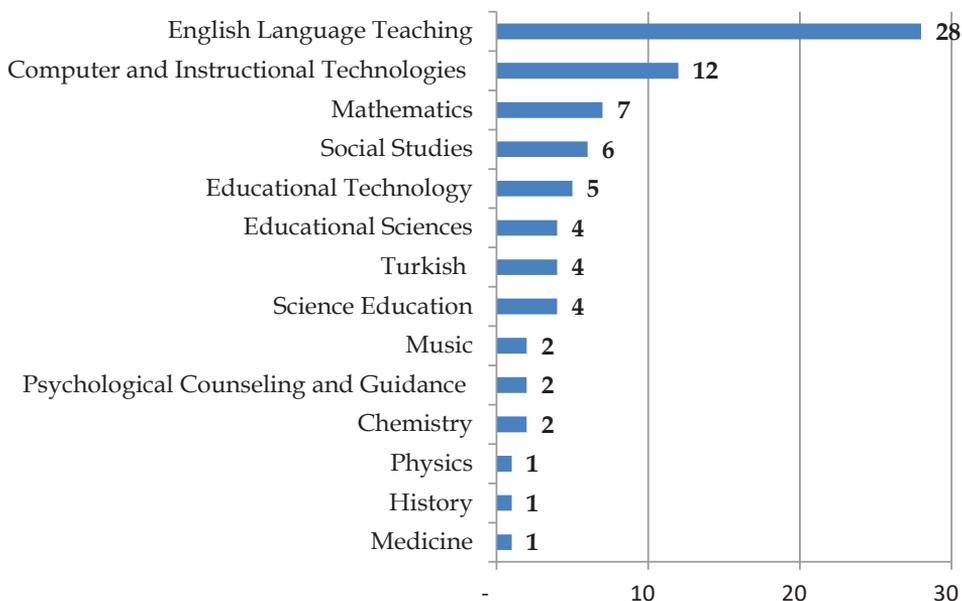
3. Findings

3.1. Trends in MA and PhD Theses about Flipped Learning in Turkey

In order to respond to the RQ1, the sub-categories identified in Table were analyzed in 51 MA and 28 PhD theses. To this end, context of the studies, research methods, distribution of theses by year, and participants of the studies were analysed.

3.2. Context of the Studies

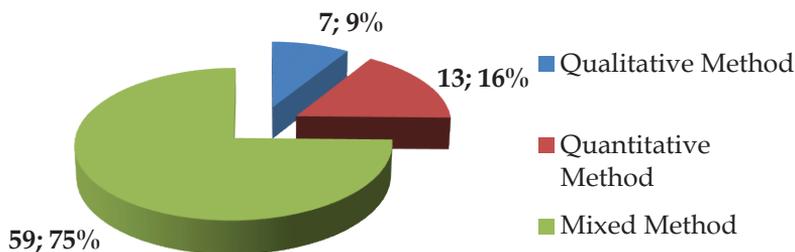
The content analysis of the studies revealed that 28 out of 79 studies were conducted in ELT context. Most of the studies focused on the effects of flipped learning on students' language skills development. The studies also reported positive aspects of flipped learning emphasizing its contribution to students' achievement, attitudes and motivation levels. The other context on which MA and PhD studies focused was found to be Computer and Instructional Technologies in which 12 studies were conducted. In the context of mathematics seven studies; six in social studies; five in educational technology; four in educational sciences, Turkish, and science education; two in music, psychological counselling and guidance, and chemistry; one in physics, history, and medicine were found as the context of the studies on flipped learning. The related graph is presented below;



Graph 1. Distribution of MA and PhD theses according to their contexts.

3.3. Research Methods

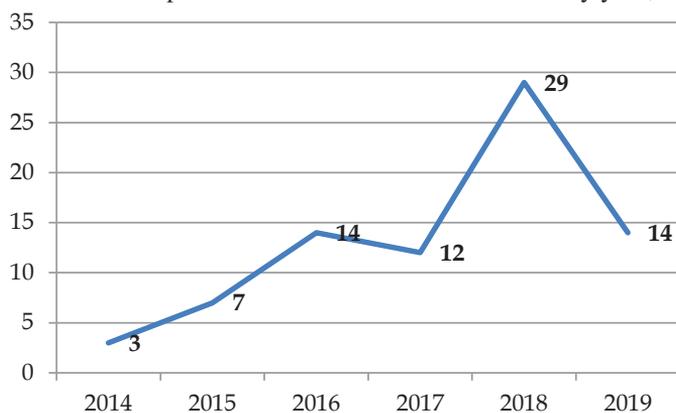
The findings in relation with the research methods of the selected MA and PhD theses revealed that 59 out of 79 theses used mixed method approach in which quantitative and qualitative data were used for triangulation. As qualitative data collection tool, most of the studies conducted semi-structured interviews. 13 of the studies used quantitative method while seven studies utilized qualitative method as explained in methodology sections of the theses. Graph 2 below illustrates the distribution;



Graph 2. Distribution of the research methods of the selected theses.

3.4. Distribution of Theses by Year

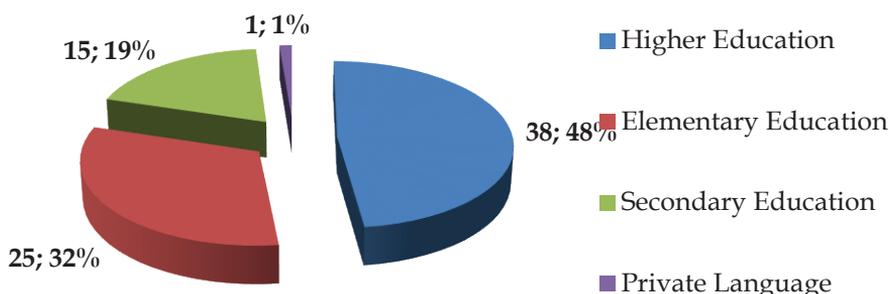
The findings with regard to year of publication of the selected theses indicated that 29 studies were conducted in 2018 as the highest in number. 14 studies were completed in 2019 and the other 14 were published in 2016. Three and seven theses were published in 2014 and 2015 respectively. This result shows that the first theses on flipped learning were published in 2014 and the increase in number went on by 2018 except from the slight decrease in 2017. Graph 3 shows the distribution of theses by year;



Graph 3. Distribution of theses by year.

3.5. Participants

According to the findings regarding the participants of the selected theses, it was found that 38 (48%) out of 79 studies were conducted in higher education context. The participants, constituting almost half of the studies, in higher education were either preparatory class students or undergraduate students in different departments. In 25 (32%) theses, the participants were elementary school students most of whom were 6th, 7th, and 8th grade students. 15 (19%) out of 79 theses focused on students in the secondary schools while only one of the theses was conducted in a private language course where different learners from different age groups participated in the study. Graph 4 below indicates the distribution of participants from different educational contexts.



Graph 4. Distribution of Participants of the Selected Theses

3.6. Main Findings in MA and PhD Dissertations about Flipped Learning in Turkey

With regard to the RQ2 ‘What are the main findings in MA and PhD dissertations about flipped learning in Turkey?’, the findings from the discussion and conclusion sections of the studies revealed that main finding of 46 theses were related to the effectiveness of flipped learning. This means that more than half of the theses found that flipped learning is more effective than traditional instructional techniques. Most of the theses focused on the achievement dimension of this effect. The other finding was that flipped learning made no difference after the treatment process. 11 of 79 theses reported that the effect of the flipped learning was not statistically significant. However, it was reported that the increase in students’ attitudes and motivation towards flipped learning could be attributed to the new instructional design. The other interesting finding from the theses was related to foreign language learning anxiety. Six studies concluded that flipping the classroom lowered students’ overall anxiety about language learning process. This can be the results of the opportunities provided through flipping about increasing learner autonomy, enabling students to stay in touch with the language outside the classroom, and flexible learning environment. The following table indicates the main findings of the selected MA and PhD theses;

Table 2. Main Findings of the Theses Included in the Study

Main Findings	<i>f</i>	Sample Theses
Flipped Learning is more effective	46	Ekmekçi (2014) Karakurt (2018)
Flipping Learning makes no difference	11	Kaptanoğlu (2018) Çarpıcı (2018)
Flipped Learning decreases foreign language learning anxiety	6	Özdemir (2016) Kansızoğlu (2018)
Flipped Learning creates positive learning environments	7	Yurdağül (2018) Filiz (2018)
Students have positive attitudes towards flipped learning as a new instructional technique	15	Akçor (2018) Turan (2015)
Flipped Learning enhances learner autonomy, self-efficacy, motivation, learner engagement.	5	İyitoğlu (2018) Erbil (2019)

As it is clear from Table 2, seven of the theses reported that flipped learning created positive learning environment. The findings from these theses were usually based on students' positive views about flipped learning and the data were gathered through interviews. 15 theses out of 79 found that students had positive attitudes towards flipped learning as a new instructional technique. These theses particularly focused on the positive atmosphere in flipped classrooms thanks to the new instructional technique. Since flipped classroom changes the traditional roles of both students and teachers, the most attractive aspect of these changed roles is probably perceived by the students as the new role of the teacher in the classroom. Lastly, five of the theses reported that flipped learning enhances learner autonomy, self-efficacy, motivation, and learner engagement. These findings are not surprising because one of the main aims of flipping is to make students take active role in the learning process. Increased learner engagement and autonomy is probably the result of the effect of flipping. Similarly, the students who can take active role and responsibility of their own learning will certainly foster self-efficacy and motivation.

4. Conclusion

Flipped learning which has become popular in recent years is a new instructional technique emphasizing autonomous learning and learner engagement. Traditional roles of both teachers and students change in this new technique. Teachers take the role of a guide and facilitator while students are the active participants of the learning process. Technologically enhanced learning environment is also supported in flipped learning as one of the aspects which makes it different from the traditional lecture-based classes. Prior to the lessons, students are expected to watch the lecture videos created by teachers at home. Class time is totally devoted to practice and problematic issues determined by

the students before they come to class. The radical change in the roles of students and teachers has attracted the attention of many researchers and scholars, which has triggered the popularity of flipped learning research. Thus, this study reviews the MA and PhD theses about flipped learning in Turkey. It aims to find out the recent trends and review findings of MA and PhD theses. Based on the data obtained from 79 theses determined through the detailed search on the National Thesis Center (NTC) web site provided by the Council of Higher Education, the study presents the recent trends and main findings about the flipped learning and its implementation in Turkish education context.

The study is significant in that it is the first systematic review of theses about flipped learning in Turkey. From the findings of the study, it can be concluded that much more research about flipped learning is needed in different disciplines. Further experimental studies on the effect of flipped classroom in education should be conducted. In addition, more qualitative studies are necessary to provide deeper insight into the use of flipped classroom. More studies should be conducted with K-12 student participants. This study can shed light for the practitioners and researchers who would like to flip their classroom and do research about flipped learning.

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