

Flipped Classroom Model and Practical Suggestions

Mehmet URFA^a

^aArmy NCO Vocational College, National Defense University, Turkey.

Article Info

Received: 13 January 2018
Revised: 19 January 2018
Accepted: 24 January 2018

Review Article

Abstract

Rapid changes in information and communication technologies have increased learners' expectations, which have caused researchers to search for new and effective ways of learning. In this respect, with the combined use of the advantages of both traditional learning models and distance education, use of blended learning models has become popular. The flipped classroom model, one of such blended models, has frequently been on the agenda in recent years. For the purpose of examining the applicability of the flipped classroom model, a number of studies in related literature have been conducted on this model, which can be defined briefly as the replacement of homework assignments with class teaching. The purpose of the present study was to investigate the application of the flipped classroom model increasingly popular in Turkey as well as in the world and to examine its application areas, the components necessary for an effective application of the flipped classroom model, the benefits of the model and the problems likely to be experienced in the application process of the model.

Keywords: Blended learning, flipped classroom model, communication technologies

1. INTRODUCTION

The rapidly developing and changing information and communication technologies have influenced the society and individuals in many areas of life including business, communication and education, and these technologies are of great importance in practices in these areas. With the increase in learning opportunities especially in the field of education, the need for integration into globalized learning environments has increased as well (Gençer, 2015). In line with this purpose, starting from 1980s, computerized learning started to be independent of face-to-face teaching and removed such limitations as age, place and time (Demirkan, Bayra and Baysan, 2016). Spread of use of the Internet, phones, tablets and computers provided students with the opportunity to continue their education lives out of school. With the help of these devices, students can go on their education independently of time and place, reach rich educational sources and thus continue their education lives out of class. This allows saving extra class time and contributes to individual development of students (Yavuz, 2016).

The changes in living standards altered students' learning preferences, and the need for active learning environments appropriate to individual learning methods that can be applied to individuals' own pace of learning. According to related literature, homework assigned in courses given with traditional methods is considered by students and their parents to be a

source of stress (Walker, Hoover-Dempsey, Whetsel and Green, 2004). It is reported that students do not know what to do and how to do it and thus do their homework wrongly and that their parents can not help their children with their homework and thus become prejudiced against school (Turanlı, 2007; Ersoy and Anagün, 2009), and that there are other studies revealing that students can not participate sufficiently in in-class applications in courses taught with traditional methods (Durak, Çankaya, Yünkül and Öztürk, 2017). These types of difficulties caused researchers to look for new and effective methods to increase the effectiveness of learning in face-to-face teaching processes (Doğan, 2015). In this respect, computerized and web-aided learning environments, which are considered to involve traditional and innovative teaching methods, started to be adopted and used together.

With the developments in digital learning technologies, these technologies started to be used in face-to-face learning environments, and blended learning methods occurred in the field of education with the combined use of beneficial aspects of face-to-face and distance education methods (Ünsal, 2012; Geçer, 2013). Blended learning environments allow learning both in traditional face-to-face class environments and in digital environments (Singh, 2003). Blended learning is a new teaching paradigm used now in mixed class environments which combines the traditional face-to-face class environments with out-of-class online multimedia technologies and which is based on student-centeredness rather than on teacher-centeredness (Huang and Kinshuk, 2013).

The Flipped Classroom (FC) model, one of blended learning approaches, has been on the agenda frequently in recent years. The FC model is a blended learning model which transfers the presentation of content in traditional classroom environment to an online platform, which transfers learning activities planned to be carried out by students at home to traditional classroom, and which allows these activities to be enriched and carried out under the guidance of the teacher (Demiralay and Karataş, 2014). In another saying, FC model is a system which replaces in-class teaching with the homework assigned for students as reinforcement, which supports students' individual learning, and which helps develop their problem-solving skills (Bishop and Vergeler, 2013). FC model, a new field of study and learning method in Turkey as well as in the whole world, allows students to learn in an active, flexible and cooperative learning environment and provides them with the opportunity to apply their theoretical knowledge.

When studies on FC model are examined quantitatively, it was found via the search on EBSCO databases using the key words of "Flipped Classroom" that a total of 6889 studies have been filtered starting from the year 2011. The distribution of these studies in number can be seen in Figure 1 below.

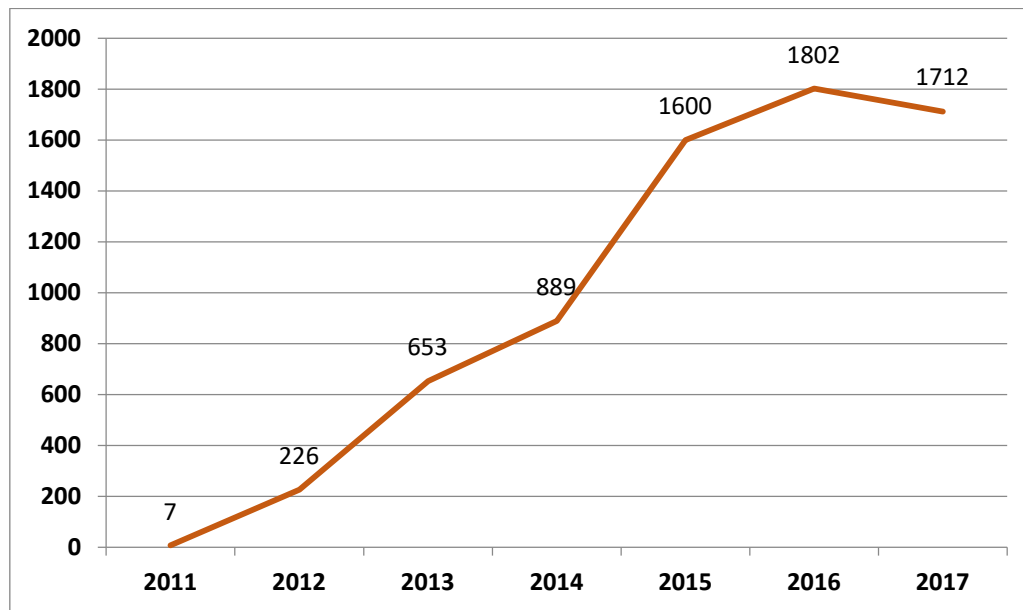


Figure 1. Number of studies on FC model in EBSCO Host databases by year.

When the distribution in Figure 1 is examined by year, it is seen that use of FC model has increased since 2011. In the light of these data, it could be stated that FC model is a research topic worth investigating for researcher; that its area of use has become increasingly widespread; and that its use will gradually increase in future. In addition, the results of the search in the database of the Thesis Center of Higher Education Council using similar key words revealed that there were two studies conducted on FC Model in 2014, eight in 2015, 14 in 2016 and six in 2017. Among these studies, 22 of them were MA thesis and 8 were PhD thesis. FC model, which has started to be used increasingly in Turkey, has been integrated by MEF University, the leading educational institution in this field, to its undergraduate and associate degree programs as appropriate to Bloom Taxonomy (MEF, 2018).

The FC model, which has occurred as an alternative to traditional learning environments, is now applied in Turkey and in the world to help students achieve more permanent and effective learning by increasing the number of in-class activities in the learning process. Accordingly, the basic purpose of the present compilation study was to reveal how the FC model is integrated into learning processes, which areas the studies carried out with this model cover mostly and what benefits and limitations the model has. In the end, various suggestions were put forward for researchers.

2. FC MODEL AND APPLICATIONS

According to related literature, FC model was first applied in the field of chemistry in 2007 by Jonathon Bergman and Aaron Sams. However, Guan (2013) stated that FC model already existed in 1990s; that the model was applied by Eric Mazur as reading activities at home due to lack of the necessary technological sub-structure; that FC model basically requires teachers to prepare course-related videos in advance, requires learners to watch these videos at their out-of-class time to prepare for the lessons (Bergmann and Sams, 2012; Bristol, 2014).

Different from the traditional teaching method, FC model allows students to learn the theoretical part of the lessons via such multimedia tools as online videos, presentations and learning management systems in out-of-class environment. Also, learners undertake the responsibility of individual learning by doing the necessary research on the content besides the related course materials given by the teacher. In class environment, students have the opportunity to share and reinforce their knowledge that they have acquired via related applications and discussion environments. In this process, the teacher takes an active role to help learners (Seaman and Gaines, 2013). Tucker (2012) points out that there is no single way for the application of FC model and that the general method of the application of the model includes sharing the video-recorded content with students at out-of-class time and carrying out the lesson-related applications under the guidance of the teacher in class.

When the studies on FC model in related literature are examined, it is seen that there is an increase in the number of these studies by year and that one of the most important reason for this increase is the influence of use of educational social network sites-social learning network (SLN) in the field of education. Among these network sites, the most common ones include Edmodo, Ning, Elgg and ValuePulse (Dere and Yalçınalp, 2016). In relation to the benefits of use of educational social network sites in education, Thongmak (2013) points out that these network sites allow a new way of interaction between teachers and students, increase out-of-class interaction between students, facilitate cooperation in group projects and allow students to spend time with their peers in a more active learning environment and to share their lesson notes and various other digital sources with each other.

When studies in related literature on FC model are examined, it is seen that the model has been applied in Turkey in such a lot of disciplines as teaching foreign language teaching (Boyras, 2014), teaching scientific ethics (Urfa and Durak, 2017), teaching scientific research methods (Sırakaya, 2015), teaching the course of material design in education (Aydın, 2016), teaching medicine (Kara, 2016) and teaching computer courses (Doğan, 2015) and that studies mostly tried to measure variables such as learners' views, their academic achievement, motivation, attitudes and satisfaction. In addition, in international literature, there are studies examining learners' academic achievement (Kong, 2014), their participation (Chen, Wang, Kinshuk and Chen, 2014) and their motivation (Abeysekera and Dawson, 2015). It is also seen that researchers mostly applied Bergman and Sams' GC model (2012) in laboratory courses and in mathematical courses as appropriate to the purpose (Strayer, 2012; Bishop and Vergeler, 2013; Davies, Dean and Ball, 2013; Talley and Scherer, 2013; Wilson, 2013; Baepler, Walker and Driessen, 2014).

In one study carried out on FC model, Aydın and Demirer (2017) conducted content analysis and found that the model was mostly applied in the fields of mathematics, mixed disciplines, foreign language teaching and engineering. In relation to the application of the model, the researchers reported that the sources were mostly reached via video-sharing sites (YouTube); that the content was mostly prepared in the form of presentation and videos; that the course

content was shared with students via such platforms as Blackboard, Google docs and Moodle; and that exam-related applications (quizzes) were most popular.

2.1. Benefits of FC Model

In traditional learning environment, learning occurs in a certain period of time in class, while in FC model, more in-class activities and applications are carried out by transferring learning to out-of-class environment, which allows learners to participate more in an active learning environment. In literature, there are a number of studies supporting this view (Tuncer and Taşpınar, 2007; Şenkal and Dinçer, 2012; Çıgılık and Bayrak, 2015; Filiz and Kurt, 2015). In addition, the biggest advantage of FC model is that it provides students with the opportunity to learn via learning tools appropriate to their own pace of learning independently of time and place (Bergmann and Sams, 2012; Davies et.al., 2013). Also, when studies in related literature are examined, it could be stated that FC model decreases students' levels of anxiety (Marlowe, 2012) and increases their competencies in cooperative working (Strayer, 2012).

In one study, Turan and Göktaş (2015) reported learners' views about this method as follows: (1) providing more practical opportunities, (2) increasing permanency of learning and (3) allowing revising the lessons repeatedly. Gençer, Gürbulak and Adıgüzel (2014) mention the benefits of FC model for teachers saying that the model encourages teachers to be in the position of a guide in class, to help students more, to work with students on one-on-one basis and in small groups, to save class time and to develop their communication with students. In addition, the researchers reported the benefits of the model for students saying that the model not only provides parents with the opportunity to monitor their children's education process but also allows students to learn in line with their own pace of learning, to develop their self-expression capabilities, to learn about the course content in advance, to follow the lesson subjects even without attending class, to take responsibilities in their individual learning activities and to work on in-class activities actively with their peers (Gençer, et.al., 2014). In studies involving use of cooperative learning in in-class applications, it was found that students taking education with FC model worked more cooperatively (Toto and Nguyen, 2009; Demski, 2012; Strayer, 2012; Butt, 2014; Hawks, 2014; Doğan, 2015). Also, in many studies (Strayer, 2012; Enfield, 2013; Hurley, 2014; Larson, Stephen and Yamamoto, 2013; Hung, 2015; Yavuz, 2016), it was revealed that FC model encouraged students to take more active part in in-class applications and activities.

In FC model, learning does not occur only in class environment. Learners are expected to take more active role in their own learning and to take more responsibility for their learning. In this process, teachers take the role of a coordinator who organizes in-class activities and who arranges the learning materials when necessary (Boyras, 2014). Ocak (2013) points out that FC model saves learners from the monotony of the traditional model and allows revising the course content repeatedly independently of time and place. According to Sırakaya (2015), use of FC model increases student-teacher and student-student interactions, involves parents in the learning process and allows them to monitor their children, provides a transparent learning

environment, helps learners to learn in accordance with their own pace of learning, allows more effective use of in-class time, increases learners' participation in class, helps them acquire the ability to work cooperatively, provides them with the opportunity to follow the class applications in cases of failure to attend class and allows revising the course content repeatedly in any place at any time. Many studies in related literature reported similar results regarding the benefits of FC model (Bergmann and Sams, 2012; Enfield, 2013; Ocak, 2013; Morgan, 2014; Turan and Göktaş, 2015). In addition, FC model is reported to decrease learners' anxiety (Marlowe, 2012) and to develop cooperative working skills (Strayer, 2012).

2.2. Limitations of FC Model

In related literature, there are several studies mentioning the negative aspects of FC model besides its benefits for teachers and students. The biggest disadvantage of FC model is reported to be the difficulty experienced by teachers in determining whether their students have watched the videos and whether they have learned the lesson subjects or not (Bergman and Sams, 2012; Jenkins, 2017). Gençer and colleagues (2014) stated that students are likely to experience difficulty in their process of individual learning while doing the out-of-class learning activities if they do not interact with their teacher or peers. In addition, it was reported that students can not ask questions to anyone about the lesson subjects they have not understood; that they may experience problems when they fail to establish semantic relationships (anlam ilişkisi?) between the lesson subjects taught; and that they eventually miss some parts related to the course content in their learning process.

Miller (2012) states that any decrease in the effectiveness of learning while using FC model is likely to be caused by failure to prepare the learning tool in a way to meet the needs, by students' failure to become active in understanding the lesson subject and by failure to create a learning environment which will allow students to speak and which will help measure their reactions.

Another disadvantage of FC model is reported to be the time to be spent on dealing with students' failure to learn the lesson subject correctly and efficiently. In one study, Turan and Göktaş (2015) reported students' negative views about FC model as follows: (1) lack of technical tools, (2) requiring more time than usual and (3) requirement to watch lesson videos in advance. Gençer and colleagues (2014) mentioned certain negative aspects of FC model saying that it takes time to prepare educational videos and that the application of the model requires technical equipment and thus loads extra burden on the teacher. The researchers also pointed out that teachers' lack of interest, desire and motivation in technology use is likely to be one of the problems to be experienced in relation to the spread of FC model.

3. CONCLUSION AND SUGGESTIONS

When the related literature on FC model is examined, it is seen that the model increases academic achievement in several courses and that learners are satisfied with the model (Başal,

2012; Pierce and Fox, 2012; Bishop and Vergeler, 2013; Enfield, 2013; Findlay and Mombourquette, 2014; Kong, 2014; Boyraz, 2014; Gençer, 2015; Sırakaya, 2015; Turan, 2015; Aydın, 2016). In addition, most studies also demonstrate that blended learning environments increase learners' motivation (Sırakaya, 2015; Chao, Chen and Chuang, 2015). Accordingly, it could be stated that FC model provides active learning environments and allows learners to access learning sources at any time and to progress in line with their own pace of learning and that the model is an important factor increasing learners' motivation. Also, there are some negative views about FC model in term of the fact that the model requires a certain level of readiness and technical knowledge and skills to prepare videos; that it is difficult to determine whether learners have watched the videos or not; and that application of the model takes time (Bristol, 2014).

In literature, it is also reported in relation to use of FC model that learners mostly prefer to learn via videos while using the model (Ekren and Akkul, 2013; Urfa and Durak, 2017); that videos are short in length (Kenna, 2014; Stifle, 2014) in a way to summarize the lesson subject (Torkelson, 2012); and that videos mostly lack motivating factors (Turan and Göktaş, 2015; Serçemeli, 2016). In addition, it could be stated that use of mobile learning tools in the application process of FC model could lead to better learning outcomes (Torun and Dargut, 2015). In related literature, it is pointed out that use of SLN besides mobile learning tools will have positive influence on the learning process (Durak, Çankaya and Yünkül, 2014; Sucu, Akbay and Akbulut, 2015; Dere and Yalçınalp, 2016; Durak, 2017). Lastly, it should be remembered that the knowledge level and the age group of the target population should be taken into account while preparing the educational materials to be used in the application of FC model (Sever, 2014).

Consequently, the necessary sub-structure should be established in educational institutions for the spread of FC model by informing teachers about the model, by investigating the areas in which the model can be effectively used, and by determining the learning outcomes clearly (Gençer et.al., 2014; Urfa and Durak, 2017).

Ters Yüz Sınıf Modeli ve Uygulanmasına Yönelik Öneriler

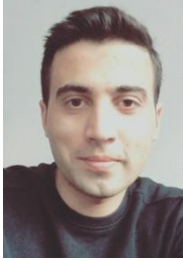
Özet

Bilgi ve iletişim teknolojilerindeki yaşanan hızlı değişimler öğrenen beklentilerini artırmış ve böylece araştırmacıları yeni ve etkili öğrenme yolları aramaya sürüklemiştir. Bu doğrultuda geleneksel öğrenme modellerinin yararlı yönleri ile uzaktan eğitimin yararlı yönlerinin beraber kullanılmasıyla harmanlanmış öğrenme modelleri kullanılmaya başlanmış ve benimsenmiştir. Harmanlanmış modellerden biri olan ters yüz sınıf modeli son yıllarda bu konuda adından sıkça söz ettirmeye başlamıştır. Kısaca ev ödevleri ile ders anlatımının yer değiştirdiği bu model ile alanyazında birçok çalışma yapılmış ve çeşitli değişkenler açısından modelin uygulanabilirliği değerlendirilmiştir. Bu çalışmanın amacı, ülkemizde ve dünyada kullanımı giderek artan ters yüz sınıf modelinin uygulanmasını, uygulama alanlarını, etkili bir ters yüz sınıf modeli uygulamasında gereken bileşenlerin neler olduğunu ve modelin yararlarıyla beraber modeli uygularken yaşanabilecek sıkıntıları sunmaktır.

Anahtar Kelimeler: Harmanlanmış öğrenme, ters yüz sınıf modeli, iletişim teknolojileri

About the Author(s)

Mehmet URFA



Mehmet URFA had his bachelor's degree in Computer Education and Instructional Technology from Marmara University in 2012, and master's degree in Computer Education and Instructional Technology from the Balıkesir University in 2017. He is currently a lecturer at the National Defense University, Army NCO Vocational College. His research interests are online learning, distance education, web programming and mobile programming.

Mailing Address: Kara Astsubay Meslek Yüksek Okulu, Altıeylül, Balıkesir, Turkey 10100
GSM : +90 541 669 18 63
E-mail : mehmeturfa01@gmail.com

REFERENCES

- Abeyssekera, L., ve Dawson, P. (2015). Motivation and cognitive load in the flipped classroom: definition, rationale and a call for research. *Higher Education Research and Development*, 34(1), 1-14.
- Aydın, B. (2016). Ters Yüz Sınıf Modelinin Akademik Başarı, Ödev/Görev Stres Düzeyi Ve Öğrenme Transferi Üzerindeki Etkisi. Yüksek Lisans Tezi, *Süleyman Demirel Üniversitesi, Eğitim Bilimleri Enstitüsü, Bilgisayar ve Öğretim Teknolojileri Eğitimi Anabilim Dalı*, Isparta.
- Aydın, B., & Demirel, V. (2017). Ters Yüz Sınıf Modeli Çerçevesinde Gerçekleştirilmiş Çalışmalara Bir Bakış: İçerik Analizi. *Eğitim Teknolojisi Kuram ve Uygulama*, 7(1).
- Baepler, P., Walker, J. D., & Driessen, M. (2014). It's not about seat time: Blending, flipping, and efficiency in active learning classrooms. *Computers ve Education*, 78, 227-236.
- Başal, A. (2012). The use of flipped classroom in foreign language teaching. *HONORARY CHAIRPERSON*, 8.
- Bergmann, J., & Sams, A. (2012). Flip your classroom: Reach every student in every class every day. *International Society for Technology in Education*.
- Bishop, J. L., & Vergeler, M. A. (2013). The Flipped Classroom: A Survey of the Research. *120th ASEE Conference ve Exposition. American Society for Engineering Education*, Atlanta.
- Boyras, S. (2014). İngilizce öğretiminde tersine eğitim uygulamasının değerlendirilmesi. Yüksek Lisans Tezi, *Afyon Kocatepe Üniversitesi, Sosyal Bilimler Enstitüsü, Eğitim Bilimleri Anabilim Dalı*, Afyonkarahisar.
- Bristol, T. J. (2014). Educate, excite, engage. *Teaching and Learning in Nursing*, 9(4), 203-206.
- Butt, A. (2014). Student views on the use of a flipped classroom approach: Evidence from Australia. *Business Education and Accreditation*, 6(1), 33-43.
- Chao, C., Chen, Y., & Chuang, K. (2015). Exploring students' learning attitude and achievement in flipped learning supported computer aided design curriculum: A study in high school engineering education. *Computer Applications in Engineering Education*, 23(4), 514-526.
- Chen, Y., Wang, Y., Kinshuk, & Chen, N. S. (2014). Is FLIP enough? Or should we use the FLIPPED model instead? *Computers ve Education*, 79, 16-27.
- Çıglık, H., & Bayrak, M. (2015). Uzaktan Öğrenme ve Yapısalci Yaklaşım. *İstanbul Journal of open Distance Education*, 1(1), 87-101.
- Davies, R. S., Dean, D. L., & Ball, N. (2013). Flipping the classroom and instructional technology integration in a college-level information systems spreadsheet course. *Education Technology Research Development*, 61(4), 563-580.
- Demiralay, R., & Karataş, S. (2014). Evde Ders Okulda Ödev Modeli. *Eğitim ve Öğretim Araştırmaları Dergisi*, 3(3), 333-340.
- Demirkan, Ö., Bayra, E., & Baysan, E. (2016). Uzaktan Eğitim Öğrencilerinin Dersleri Takip Etme Durumlarının Dönemsonu Başarılarına Etkisi. *Türkiye Sosyal Araştırmalar Dergisi*, 20(1), 47-75.

- Demski, J. (2013). 6 Expert tips for flipping the classroom. *Campus Technology*, 26(5), 32-37.
- Dere, E., & Yalçınalp, S. (2016). İlköğretim Öğrencilerinin Eğitsel Bir Çevrimiçi Sosyal Öğrenme Ortamı Olan Edmodo'ya İlişkin Görüşleri. *İlköğretim Online*, 15(3), 804-819.
- Doğan, T. G. (2015). Sosyal medyanın öğrenme süreçlerinde kullanımı: ters-yüz edilmiş öğrenme yaklaşımına ilişkin öğrenen görüşleri. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi*, 1(2), 24-48.
- Durak, G. (2017). Using Social Learning Networks (SLNs) in Higher Education: Edmodo Through the Lenses of Academics. *International Review of Research in Open and Distributed Learning*, 18(1), 84-109.
- Durak, G., Çankaya, S., & Yüncül, E. (2014). Eğitimde Eğitsel Sosyal Ağ Sitelerinin Kullanımı: Edmodo Örneği. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, 41, 309-316.
- Durak, G., Çankaya, S., Yüncül, E., & Öztürk G. (2017). The Effects of a Social Learning Network on Students' Performances and Attitudes. *European Journal of Education Studies*, 3(3), 312-333.
- Ekren, N., & Akkul N. (2013). "-Bilgisayar ve İnternet Destekli Uzaktan Eğitim Programlarının Değerlendirme Aşamaları (UZEM örneği). 8. Ulusal Eğitim Yönetimi Kongresi, 21-23.
- Enfield, J. (2013). Looking at the impact of the flipped classroom model of instruction on undergraduate multimedia students at CSUN. *TechTrends*, 57(6), 14-27.
- Ersoy, A., & Anagün, Ş. S. (2009). Sınıf öğretmenlerinin fen ve teknoloji dersi ödev sürecine ilişkin görüşleri. *Necatibey Eğitim Fakültesi Elektronik Fen ve Matematik Eğitimi Dergisi*, 3(1), 58-79.
- Filiz, O., & Kurt, A. A. (2015). Flipped Learning: Misunderstandings and the Truth. *Eğitim Bilimleri Araştırmaları Dergisi*, 5(1), 215-229.
- Findlay-Thompson, S., & Mombourquette, P. (2014). Evaluation of a flipped classroom in an undergraduate business course. *Business Education ve Accreditation*, 6(1), 63-72.
- Geçer, A. (2013). Harmanlanmış Öğrenme Ortamlarında Öğretim Elemanı-Öğrenci İletişimi. *Kuram ve Uygulamada Eğitim Bilimleri*, 13(1), 349-367.
- Gençer, B. G. (2015). Okullarda Ters-Yüz Sınıf Modelinin Uygulanmasına Yönelik Bir Vaka Çalışması. Yüksek Lisans Tezi. *Bahçeşehir Üniversitesi, Eğitim Bilimleri Enstitüsü, İstanbul*.
- Gençer, B. G., Gürbulak, N., & Adıgüzel, T. (2014). Eğitimde Yeni Bir Süreç: Ters-Yüz Sınıf Sistemi. *International Teacher Education Conference*. Dubai, UAE.
- Guan, S. (2013). Flipped learning driven by students: a case study of a foreign language class. *ICERI2013 Proceedings*, 464-468. ICERI2013 Proceedings.
- Hawks, S. J. (2014). The flipped classroom: now or never? *Journal of the American Association of Nurse Anesthetists*, 82(4), 264-269.
- Huang, R., & Kinshuk, J. (2013). Reshaping Learning. *New Frontiers of Educational Research*. Springer-Verlag Berlin Heidelberg.

- Hung, H. (2015). Flipping the classroom for English language learners to foster active learning, *Computer Assisted Language Learning*, 28(1), 81-96.
- Hurley, K. S. (2014). A case study of learner and instructor perceptions of flipped course design and interactive learning environment, *International Journal Social Media and Interactive Learning Environments*, 2(4), 361-377.
- Jenkins, C. (2017) The Advantages and Disadvantages of the Flipped Classroom <http://blog.echo360.com/blog/bid/59158/The-Advantages-and-Disadvantages-of-the-flipped-classroom>. İnternetten 10.01.2018 tarihinde alınmıştır.
- Kenna, D. C. (2014). *A study of the effect the flipped classroom model on student selfefficacy*. Master's thesis, North Dakota State University, Fargo, North Dakota.
- Kertil, M. (2008). Matematik Öğretmen Adaylarının Problem Çözme Becerilerinin Modelleme Sürecinde İncelenmesi. Yüksek Lisans Tezi, *Marmara Üniversitesi, Eğitim Bilimleri Enstitüsü, Ortaöğretim Fen ve Matematik Alanları Eğitimi Ana Bilim Dalı*, İstanbul.
- Kong, S. C. (2014). Developing information literacy and critical thinking skills through domain knowledge learning in digital classrooms: An experience of practicing flipped classroom strategy. *Computers ve Education*, 78, 160-173.
- Larson, S., & Yamamoto J. (2013). Flipping the college spreadsheet skills classroom: initial empirical results. *Journal of Emerging Trends in Computing and Information Sciences*, 4(10), 751-758.
- Marlowe, C. A. (2012). The Effect Of The Flipped Classroom On Student Achievement And Stress. *Montana State University, Science Education*, Master's Thesis. Montana.
- MEF (2018). Flipped Classroom. <http://www.mef.edu.tr/tr/flipped-learning>. (Erişim Tarihi: 10.01.2018)
- Miller, A. (2012). *Five Best Practices for the Flipped Classroom*. <https://www.edutopia.org/blog/flipped-classroom-best-practices-andrew-miller> (Erişim Tarihi: 04.01.2018)
- Morgan, H. (2014). Focus on Technology: Flip your classroom to increase academic achievement. *Childhood Education*, 90(3), 239-241.
- Ocak, G. (2013). Yöntem ve Teknikler. G. Ocak (Dü.) içinde, *Öğretim İlke ve Yöntemleri* (s. 253-358). Ankara: Pegem Akademi.
- Pierce, R., & Fox, J. (2012). Vodcasts and active-learning exercises in a “flipped classroom” model of a renal pharmacotherapy module. *American Journal of Pharmaceutical Education*, 76(10), 196.
- Seaman, G., & Gaines, N. (2013). Leveraging digital learning systems to flip classroom instruction. *Journal of Modern Teacher Quarterly*, 1, 25-27.
- Serçemeli, M. (2016). Muhasebe eğitiminde yeni bir yaklaşım önerisi: ters yüz edilmiş sınıflar. *Muhasebe ve Finansman Dergisi*, 69, 115-126.
- Sever, G. (2014). Bireysel çalgı keman derslerinde çevrilmiş öğrenme modelinin uygulanması. *Eğitimde Nitel Araştırmalar Dergisi*, 2(2).
- Sırakaya, D. A. (2015). Tersyüz Sınıf Modelinin Akademik Başarı, Öz-Yönetimli Öğrenme Hazırbulunuşluğu ve Motivasyon Üzerine Etkisi. Doktora Tezi, *Gazi Üniversitesi*,

- Eğitim Bilimleri Enstitüsü, Bilgisayar ve Öğretim Teknolojileri Eğitimi Ana Bilim Dalı*, Ankara.
- Singh, H. (2003). Building Effective Blended Learning Programs. *Educational Technology*, 43(6), 51-54.
- Stifle, T. L. (2014). *A case study transitioning a traditionally offered career counseling graduate course to a blended format: analysis and recommendations*. Doctoral thesis, University of Redlands, California.
- Strayer, J. F. (2012). How learning in an inverted classroom influences cooperation, innovation and task orientation. *Learning Environments Research*, 15(2), 171-193.
- Sucu, F., Akbay, M., & Akbulut, Y. (2015). Tıp Eğitiminde İçerik Yönetim Sistemi: EDMODO. *Journal of Medical Education and Informatics*, 1(1), 24-32.
- Şenkal, O., & Dinçer, S. (2012). Geleneksel Sınıfların Uzaktan Eğitim Platformuna Dönüştürülmesi: Bir Model Çalışması. *Bişişim Teknolojileri Dergisi*, 5(1), 13-17.
- Talley, C. P., & Scherer, S. (2013). The enhanced flipped classroom: Increasing academic performance with student-recorded lectures and practice testing in a “flipped” stem course. *The Journal of Negro Education*, 82(3), 339-347.
- Thongmak, M. (2013). Social Network System in Classroom: Antecedents of Edmodo © Adoption. *Journal of e-Learning and Higher Education*, 1, 1-15.
- Torkelson, V. (2012). *The flipped classroom, putting learning back into the hands of student*. Master's thesis, Saint Mary's College of California, California, U.S.
- Torun, F., & Dargut, T. (2015). Mobil Öğrenme Ortamlarında Ters Yüz Sınıf Modelinin Gerçekleştirilebilirliği Üzerine Bir Öneri. *Adnan Menderes Üniversitesi Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 6(2), 20-29.
- Toto, R., & Nguyen, H. (2009). Flipping the work design in an industrial engineering course. *39th ASEE/IEEE Frontiers in Education Conference*, 1-4.
- Tucker, B. (2012). The flipped classroom. *Education next*, 12(1).
- Tuncer, M., ve Taşpınar, M. (2007). Sanal Eğitim- Öğretim ve Geleceği. *Elektronik Sosyal Bilimler Dergisi*, 6(20), 112-133.
- Turan, Z. (2015). Ters Yüz Sınıf Yönteminin Değerlendirilmesi ve Akademik Başarı, Bilişsel Yük ve Motivasyona Etkisinin İncelenmesi. Doktora Tezi, *Atatürk Üniversitesi, Bilgisayar ve Öğretim Teknolojileri Eğitimi Ana Bilim Dalı*, Erzurum.
- Turan, Z., & Gökteş, Y. (2015). Yükseköğretimde Yeni Bir Yaklaşım: Öğrencilerin Ters Yüz Sınıf Yöntemine İlişkin Görüşleri. *Yükseköğretim ve Bilim Dergisi*, 5(2), 156-164.
- Turanlı, A.S. (2007). Gerçek Bir İkilem: Ödev Vermek ya da Vermemek. *Sosyal Bilimler Araştırmaları Dergisi*, 1, 136-154.
- Urfa, M., & Durak, G. (2017). Implementation of the Flipped Classroom Model in the Scientific Ethics Course. *Journal of Education and e-Learning Research*, 4(3), 108-117.
- Ünsal, H. (2012). Harmanlanmış Öğrenmenin Başarı ve Motivasyona Etkisi. *Türk Eğitim Bilimleri Dergisi*, 10(1), 1-27.
- Walker, J., Hoover-Dempsey, K., Whetsel, D., & Green, C. (2004). Parental Involvement in Homework: A Review of Current Research and Its Implications for Teachers, After School Program Staff, and Parent Leaders. *Harvard Family Research Project*, 1-10.

Wilson, S. G. (2013).The flipped class: A Method to address the challenges of an undergraduate statistics course. *Teaching of Psychology*, 40(3), 193-199.

Yavuz, M. (2016). Ortaöğretim Düzeyinde Ters Yüz Sınıf Uygulamalarının Akademik Başarı Üzerine Etkisi ve Öğrenci Deneyimlerinin İncelenmesi. Yüksek Lisans Tezi. *Atatürk Üniversitesi, Bilgisayar ve Öğretim Teknolojileri Eğitimi Anabilim Dalı*, Erzurum.