Flipped Classroom Model and Practical Suggestions

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**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 used 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 (Boyraz, 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 Taşpinar, 2007; Şenkal and Dinçer, 2012; Çağlık 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 (Boyraz, 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 Gökttaş, 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 Yağışalp, 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).
**Özet**


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

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