

# Students' Views on the Teaching Process Based on Social Media Supported Flipped Classroom Approach

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**Abstract:** *The flipped classroom method, where in-class and non-class activities are translocated, is accepted as one of the new generation teaching models. The aim of this study is to reveal students' views on the use of social media in the teaching process based on the flipped classroom approach. This study is a qualitative action research and opinions of the participants were taken through semi-structured individual interviews. The study found that although the initial thoughts of the students about the social media supported flipped classroom method were negative, the final and the general thoughts were positive, that it improved in-class/non-class communication and interaction, facilitated learning and increased motivation. The negative aspects of this method were found to be distractibility stemming from advertisements and notifications on social media, irrelevant negative comments, need for internet connection or excessive use of internet and feeling of being under constant surveillance. Video ads uploaded on YouTube and the students' consuming up their mobile data plans come to the fore as a disadvantage. The majority of the students expressed Kaboot activity as an incentive for watching videos.*

**Keywords:** *Flipped Classroom Method; Social Media.*

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## 1. Introduction

The world is becoming more globalized as the rapid development and change in information and communication technologies are combined with the influence of social media, which has become an indispensable part of daily life. Prensky (2001) names today's people who are born into technology and are constantly in interaction with technology anytime, anywhere, as digital citizens. Digital citizens can create communities by bringing together people living in different places, generate a variety of content which they debate on, comment and shape their emotions, thoughts and works accordingly, and have the opportunity to interactively share these with each other or with a wide audience with the next generation communication platforms called social media (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011).

One of the main sectors affected by this process is education. The widespread use of the Internet, social media and mobile technologies has increased the means for access to information. This has led to the implementation of teaching processes outside of traditional classroom environments (Yıldırım, 2016).

Digital citizens, as stated by Prensky (2001), should be individuals who know how to reach information, can think critically, are collaborative, creative, self-directed, are open to new ideas and can take initiative, have high level communicational, social and cultural skills, problem solving skills and leadership skills, are productive, accountable, and are information and communication technologies literate to become successful in both education and business life (Eryilmaz & Uluyol, 2015). It is extremely difficult for digital citizens to acquire the specified 21st century skills by reading, listening and watching teachers' presentation, that is, through the one-way teaching method, in which the passive participation of the student takes place as in the traditional method (Karadeniz, 2015; Betül, 2016;).

As a result of all these developments, the quest for new teaching methods in education has accelerated. The teaching approaches in which the teacher is at the center have started to be replaced by effective, motivating and entertaining student-centered approaches where technology is benefitted from as much as possible to improve the "I can do it" attitude (Jones, 2007). One of these new teaching methods is the flipped classroom method supported by information and communication technologies, which is believed to solve the limitations and problems in today's teaching processes (Serçemeli, 2016). The word "flip", which means to invert, refers to carry out in-class activities in traditional approaches, such as teaching, outside the

classroom, and to perform non-class activities such as homework in the classroom. Thus, it is defined as the translocation of the educational activities to be carried out at home and at school (Strayer, 2009).

At the core of this teaching method, videos are prepared for the theoretical part of the course taught by the teacher. Students learn the subject by watching the course video wherever and whenever they want. In the classroom, students perform, high level cognitive activities such as homework, discussion, brainstorming individually or in groups. Thus, the theoretical knowledge learned outside the classroom is reinforced (Serçemeli, 2016; Gençer, 2015; Strayer, 2012; Ash, 2012).

In the flipped classroom method, the student can easily access to information by improving his/her skills related to independent learning, lifelong learning, and access to and use of information. The teacher plays a guiding role, rather than instruction, and provides the student with opportunities such as individual and group work in the classroom. In addition, the student uses the time spent in the classroom more efficiently because the theoretical knowledge is learned outside. In addition, students attend class activities more conveniently as they come ready for class. During the activities, students can ask the points they could not understand to the teacher who functions as a guide (Serçemeli, 2016; Herreid and Schiller, 2013; Bergmann and Sams, 2012; Miller, 2012; Enfield, 2013; Fulton, 2012; Duerdan, 2013; Morgan, 2014; Talbert, 2012; Bolat, 2016).

The most important disadvantage of this teaching method is the students' not watching the videos prepared by the teacher, for various reasons. Since theoretical teaching takes place outside the classroom, it is difficult for the teacher to follow whether or not the student is learning correctly or how much he or she has learned. In addition, it is difficult for the student to ask instant questions and receive feedback in non-class activities. High technical requirements can also be considered other technical disadvantages arising from technological systems in the implementation process (Bergmann and Sams, 2012; Miller, 2012; Enfield, 2013; Duerdan, 2013; Talbert, 2012; Bolat, 2016).

Strayer (2009) explains the flipped classroom method as a model in which teachers can use multiple approaches simultaneously. In order to eliminate the limitations and to use the flipped classroom method more efficiently, its promotion with different information and communication technologies and teaching methods will contribute to this process. Supporting the flipped classroom method with social media comes to the fore as one of these methods. In education, social media is used to enhance student-student and teacher-student communication, to share information

and resources, to gather information, to accelerate students' access to course material outside of class hours, to provide alternative to institutional learning methods, to occupy students and understand what they think during teaching, to create student study groups and increase the interest and cooperation of the students in the class (Legaree, 2015; O'Brien, 2012;) In addition to this, Friedman & Friedman (2013) state that the use of social media in teaching contributes to increase communication and collaboration of students and develop their critical thinking and problem solving skills.

### ***1.1. Related Studies***

In a study conducted by Mok (2014), the flipped classroom approach was used to increase participation in the programming course and enrich the content. Students reported that this method facilitates learning and that they reinforced their learning because they could watch the videos over and over again.

In another study by Turan and Gökteş (2015), students' opinions were taken to determine the pros and cons of the flipped classroom management method. According to the findings obtained in this study, it was stated that the flipped classroom method prevents rote learning, provide permanent learning, the content of the course can be accessed from anywhere at any time, it gives the chance to get through the content repetitively and allows for learning by doing. Its limitations are mentioned to be the necessity for technological infrastructure, difficulties experienced in the adaptation process, lack of instant feedback and the need for watching lecture videos in advance of the in-class activities.

Görü Doğan (2015) conducted a pilot study to investigate students' views and experiences about conducting the class through the social media supported flipped classroom approach. According to the results of this study, students state that supporting the course with social media contributes to the teaching process. In addition, the students state that there are some discrepancies about the relationship and communication issues in the classroom. The author argues that this situation arises from the application environment and it will not occur in different environments supported by social media.

Özyurt & Özyurt (2016) evaluate the impact of Facebook on improving students' learning experiences and learning programming. The study is carried out within the scope of Programming and Algorithm Course taught in the software engineering department of a university's technology faculty throughout the fall semester of 2014-2015 academic year. A Facebook group is created to enrich teaching at the outset. 63 freshmen

engineering students and faculty members joins the Facebook group. The Educational use of Facebook Scale and semi-structured interview forms are used as data collection tools in the study. Qualitative data are subjected to content analysis and quantitative data are analyzed descriptively. The results of this study show that Facebook has positive effects such as providing a rich content for the learning program, increasing extracurricular communication, providing a collaborative and cooperative learning environment, increasing motivation and bringing different perspectives. On the other hand, it causes problems in face-to-face communication and self-expression. According to the results of the study, it can be argued that Facebook can be used efficiently to support classroom teaching strategies and to enrich learning experiences in the teaching of programming.

Another study conducted by Sezer (2017) examined the academic achievement and motivation of students who are educated at technologically enriched flipped classroom environments. Various electronic materials supporting the flipped classroom environment are distributed to the students in the experiment group 3 days in advance of the course. Before the normal class hours, the basic framework of the subject is discussed with the students, problem situations are formed and solutions are proposed, unresolved issues are highlighted and, most importantly, student-teacher interaction is realized at the highest level. The study finds that the students in the experimental group have both better academic achievement and more motivation when compared to the control group.

In another study, Chen, Su, Huang & Yang (2018) revealed the perceptions and experiences of a group of students on flipped classroom method, use of social networks, effect of utilization of game-based learning and class response systems as teaching methods with a study group that consists of 257 students. Data were collected following a qualitative methodology. According to the findings, it is seen that the flipped classroom method facilitates motivation, autonomy and commitment to learning. It also serves to promote participation and commitment to the professional community and citizenship. In addition, the results of the learning-teaching process show an increase in the autonomy of the prior knowledge necessary to solve the homework and formative assessment. Finally, these studies support the reflection of one's own teaching practice.

A qualitative study conducted by Öznacar, Köprülü & Çağlar (2019) examines the academic performance, participation levels, learning attitudes and academic achievement of international students who are educated according to the flipped classroom method. The study finds that the flipped classroom method has a more useful instructional design than the courses

taught with traditional methods. The findings show that students who use Edmodo to follow the course acquire better learning outcomes and develop better attitudes towards learning experiences.

### ***1.2. Theoretical Knowledge***

The flipped classroom method was first applied in 2007 by two high school chemistry teachers, Jonathan Bergmann and Aaron Sams. Initially, the aim of the application was to record the courses taught at the class and publish them online so that the students who missed the class could watch later. Following the online publication of the course videos in a downloadable format, it was understood that it would be more efficient to allocate the time that is actually spent for the teaching of theoretical knowledge to the group study activities in the classroom; and the flipped classroom method became widespread with the idea that it could be applied to all students (Bergmann & Sams, 2012).

When the theoretical foundations of the model are examined, it is seen that the flipped learning model is a kind of hybrid learning models. The education structures in which traditional teaching methods and technology are integrated together are called hybrid learning or mixed learning (Staker & Horn, 2012). In addition, the flipped learning model eliminates the limitations in the learning environment to a certain extent as in the mobile learning method. This method supports problem-based, collaborative, inquiry-based and active learning theories. Moreover, it is seen that the flipped learning model is based on social constructivist approach which is one type of the constructivist approaches. Social constructivism states that the structuring of knowledge will unfold through socially and culturally regulated experiences (Hung, 2015; Brame, 2013).

## **2. Purpose**

The purpose of this study is to reveal students' views on the use of social media in the teaching process based on the flipped classroom approach. The research questions in this context are as follows.

What are the students' views on the use of social media in the Programming Languages course designed according to the flipped classroom approach?

What are the general views of students on the social media supported flipped classroom approach?

a. What are the positive and negative aspects of the implementation of social media supported flipped classroom approach?

b. What are the views of students on the videos shared via YouTube and Facebook?

c. What are the factors enhancing and diminishing motivation towards the class?

d. What are the general views of students on the impacts of social media supported flipped classroom approach on the motivation of the students for the class?

### **3. Method**

#### ***3.1. Research Model***

In this study, a qualitative action research was chosen as the research model. Action research is conducted by an expert researcher with the participation of the parties to the problem and the practitioners in order to define the problem in depth, solve the existing problem and improve the situation (Aksoy, 2003). The reason for choosing this research design is to get students' views and experiences regarding the promotion of the course, which is taught by the researcher based on the flipped classroom method, with social media support in order to eliminate the limitations of the course and to redesign the course accordingly. Since the author is also the teacher of the course, he had the chance to make observations regarding the limitations of the course and conduct individual interview with the students, who were a party to the problem, at the end of the semester.

#### ***3.2. Participants***

This study was carried out on 20 students who took Programming Languages course in Near East University, Department of Computer Education and Instructional Technology in 2016-2017 fall term. 58% of the participants were male, 42% were female, and mean age of the participants was 20.

#### ***3.3. Data Collection Tools***

In the study, a semi-structured individual interview form, one of the qualitative data collection methods, was used to examine students' views on the use of social media in the Programming languages course designed based on the flipped classroom approach. With semi-structured forms, the researcher prepares the questions in advance and receives in-depth answers with the probes asked to the participant in the course of the interview (Türnüklü, 2000).

The semi-structured interview form consists of 8 open-ended questions. 5 of the questions have 6 sub-questions. The interview form which was developed by the author was examined by three professors and one teacher. In addition, a pilot study was conducted to measure the clarity and answerability of the questions. At the end of the pilot study process, students stated that the interview questions were understandable, and certain minor changes were made on the form by the author to bring it to the final form.

The data collection process of the study started after the end of the programming languages course, which is a core course. Invitations were sent to the students to participate in the project via Facebook and 20 students gave a positive response to the invitation. The interviews, which were conducted on a voluntary basis in the classroom environment and conversational atmosphere, were completed in two weeks. In addition, the author audio-recorded the interviews with the permission of the participants.

### ***3.4. Data Analysis***

Qualitative data analysis was performed on the data obtained from individual interviews. The audio recordings were transcribed using a computer, and content analysis was performed on these transcripts. Content analysis is one of the most appropriate methods in qualitative data analysis (Kitzinger & Barbour, 1999). During the analysis of the audio records, the research questions were taken into consideration and codes were formed accordingly. Then, similar and related codes were categorized into themes. Finally, the data were elaborated on and interpreted in detail.

## **4. Implementation**

Before the implementation process, a 14-week syllabus was prepared and shared with the students at the beginning of the semester, which included all the details such as the aim, subjects, teaching method, scope, activities and grading of the programming languages course. In the syllabus, it is stated that the course will be taught with the social media supported flipped classroom method, and a Facebook group and YouTube channel was created by the teacher for this purpose. Students were particularly reminded to follow the social media accounts of the course.

In the context of the flipped classroom method, the theoretical part of the programming languages course was taught and video-recorded by the teacher using Camtasia program. The videos were shared via the YouTube

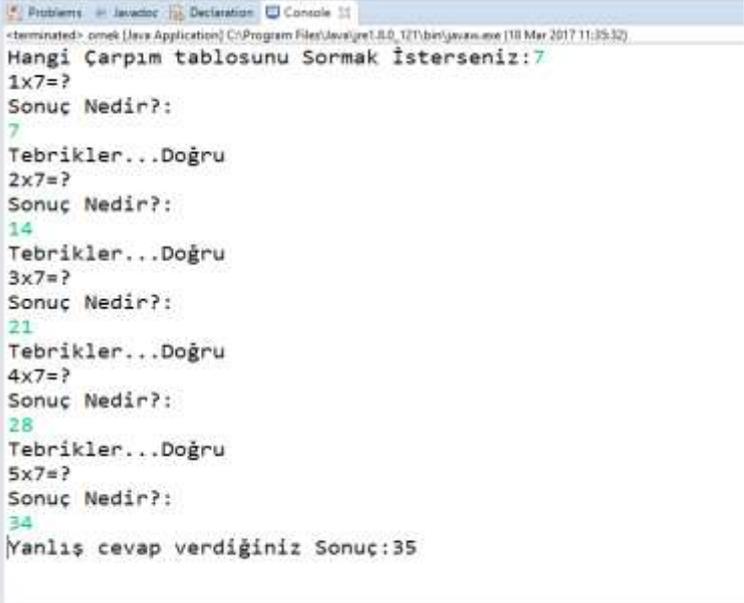
channel. In addition, the video and other course contents of that week were shared on the social media group.

Before starting the class, the students were asked about the parts of the videos they did not understand and were given the necessary answers. Then, an online question-answer event called Kahoot was held at the beginning of the class. Kahoot event, which involved multiple choice and gap filling questions with video, image and text, was prepared by the teacher. The event was covering the videos shared that week. The questions were projected on the whiteboard and the students participated in the Kahoot event via their smartphones, tablets and computers. Extra bonus points were given to the top three students and the top five students were announced from the Facebook group to congratulate (Figure 2). After Kahoot application was performed, the activity of the week was passed on to. In-class activities were conducted as individual or group work, and the teacher, who took on the function of guidance, coached the students by giving them the necessary tips. An example of the in-class activities is shown in Table 1. In addition, a discussion board was opened on the Facebook group about the content of the event to be held next week and the students shared their ideas on this board.



**Figure 1:** Example of a Kahoot Event Result

**Table 1:** In-Class Activity Carried out in Week 3.

<b>Week-3 In-Class Activity</b>	
Activity Title:	Educational Software-Multiplication Table Learning Program
Duration:	120 Minutes
Application Topics	Variable Definition, Arithmetic Operations, User Data Entry, Control Statements Loop statements (for.do, while.do, and repeat.until), Control Statements
Explanation	<p>Please develop the Multiplication Table Learning Program, the features of which is given below, and send the isimsoyisim.zip file via Moodle.</p> <ol style="list-style-type: none"> <li>1. Ask the user: "Which multiplication table do you want to ask?" to learn the multiplication table to be worked on.</li> <li>2. The user will be asked with the multiplication table operation from 1 to 10 based on the figures entered by the user. If the answer entered by the user is correct, "Congratulations... Correct" phrase will be printed on the screen and the next question will be passed on to. If the answer is wrong, "Your answer is wrong, the result is:" phrase will be printed on the screen with the correct answer, and the program will be terminated.</li> </ol>
Program Output	 <pre> &lt;terminated&gt;-&gt;_omek [Java Application] C:\Program Files\Java\jre1.8.0_121\bin\javaw.exe [18 Mar 2017 11:35:32] Hangi Çarpım tablosunu Sormak İsterseniz?:7 1x7=? Sonuç Nedir?: 7 Tebrikler...Doğru 2x7=? Sonuç Nedir?: 14 Tebrikler...Doğru 3x7=? Sonuç Nedir?: 21 Tebrikler...Doğru 4x7=? Sonuç Nedir?: 28 Tebrikler...Doğru 5x7=? Sonuç Nedir?: 34 Yanlış cevap verdiğiniz Sonuç:35 </pre>

## 5. Findings and Discussion

Within the scope of the study, a focus group interview form, one of the qualitative data collection methods, was used to examine the views of students on the use of social media in the programming languages course designed based on the flipped classroom approach.

### ***5.1. General Views of Students on the Social Media Supported Flipped Classroom Approach***

General views of students on the social media supported flipped classroom approach are presented in Table 2. According to these findings, the initial thoughts of the majority of students about the method to be used are seen to be negative such as: surprise (N=7), the class will be challenging (N=5), curiosity (N=3), fear (N=3). Certain student statements regarding these findings are presented below:

*Student 1: "I was very surprised when the teacher first mentioned that he would teach with a different method. I'm surprised I didn't expect to learn the class through a different method at all"*

*Student 2: "When I first heard that the theoretical part of the course would be followed from the videos, and that the activities would be a part of grading, I thought it would be a very challenging course"*

*Student 3: "At first, I had no idea about the method you were talking about, so for the last semester, for example, we were learning the course through a method that could be considered traditional and I was missing the class when I did not go to school that day. So, I was very curious about it"*

*Student 4: "I was afraid when I first heard of it, but I liked it then"*

*Student 5: "The first thing I thought was that it would be different from other courses and that it would be a useful method in which we would research and find something or gain time by watching the videos before coming to the school, in comparison to the ordinary teach and go method"*

Likewise, Turan (2015) stresses in his study that the students had difficulties at the early weeks but kept up with the model and applied it smoothly after the second week.

**Table 2:** General Views of Students on the Application

Category	Code	f
Initial Thought	I was surprised	7
	I thought that the course would be challenging	5
	I was curious	3
	I was afraid	3
	I thought it would be useful	2
	I thought I would be active	1
Final Thought	I thought it was a much better method than my initial thought	10
	It is a funny method	6
	It can be used in any courses	3
	It is a useless method	2
General Thought	Positive	18
	Negative	2

According to the findings in Table 2, although the initial thoughts of the students were mostly negative, their final thoughts have shifted in the positive direction. Accordingly, the students' final thoughts are: 'it is a much better method than my first thought' (N=10), 'it is a funny method' (N=6) and 'it can be used in any course' (N=3). Some of the remarkable expressions mentioned by the students are presented below:

*Student 3:* "I was able to close my gap with the videos, when I didn't come to class. So, it was above my expectations, certainly not expecting this much"

*Omer:* "I did not think that the course would be that way, but it totally met my expectations"

*Student 6:* "The flipped learning, that we had never seen or heard of before, was very different. I'm not very good at the coding class, but it caught my attention a lot, and I came to the class more excitedly. It was a funny class. It also met my expectation at a high level"

*Student 4:* "My final thought at the end of the course is that it can be used in any courses if desired"

In addition, as it is shown in Table 2, a great majority of the students expressed positive views about the social media supported flipped classroom

method (N=18). Some of the remarkable statements of the students are presented below:

*Student 3: "Because we used a different teaching model, we have learned the course more efficiently. A positive and very nice method"*

*Student 8: "It is a very useful method. My view is positive"*

*Student 7: "My view is positive. I wish it is applied as a traditional method in future"*

Similar to the findings of this study, In a study by Turan (2015), it was found that the students gave negative reactions when they first heard about the flipped classroom method, but that their opinions were shifted to positive at the end of the course process. In the literature, there are studies indicating that students mostly view the flipped classroom positively (Yestrebksy, 2015; Asiksoy & Özdamlı, 2016; Stone, 2012; Turan, 2015; Touchton, 2015) and there are also those that argue the opposite (Milman, 2012; Davies, Dean, & Ball, 2013). It can be argued that, students' having the chance to perform more activities in the classroom, accessing to information whenever and wherever they want, having the opportunity to learn and reinforce their knowledge in accordance with their own pace of comprehension, and the performance of the learning process both individually and collaboratively in the flipped classroom method, are the significant factors in students' having positive views about the method.

### ***5.2. Positive and Negative Aspects of the Utilization of Social Media Supported Flipped Classroom Method***

The findings obtained through the individual interviews conducted to determine students' views on the positive and negative aspects of the utilization of social media supported flipped classroom approach are shown under main headings and subheadings in Table 3.

**Table 3:** Positive and Negative Views of Students on the Course

<b>Category</b>	<b>Code</b>	<b>Sub-Code</b>	<b>f</b>
Positive Aspects	Enhancing in/non-class communication and interaction	Easy communication opportunity with peers and teacher	7
		Ease of feedback	5
		Knowledge sharing	3
		Instant communication	2
		Following up the peers	1
		Communication	1
		Opportunity	

	Facilitating Learning	Access to course content anytime and anywhere	10
		Easy course follow-up	6
		Chance to watch the course videos for multiple times	6
		Preparation for the course in advance	4
		Ensuring sustainable learning	3
		Learning before coming to class	2
			Encouraging
	Enhancing Motivation	Funny	9
		Attracts attention in the class	8
Negative Aspects		Distraction due to ads and pop-ups	15
		Decreasing class attendance	7
		Internet Requirement/ over-use of the internet	6
		Feeling of constantly being monitored	2

### 5.2.1 Positive Aspects of Supporting the Course with Social Media

Participants were asked about the positive aspects of supporting the programming languages course, designed based on the flipped classroom approach, with social media. The findings were classified under three sub-headings as: (1) enhancing in-class communication and interaction, (2) facilitating learning and (3) enhancing motivation.

#### 5.2.1.1. Enhancing In/Non-Class Communication and Interaction

The students stated that one of the positive aspects of using the social media supported flipped classroom approach is to enhance the communication and interaction in and out of the classroom. In this context, according to the views of students the factors enhancing in/non-class communication and interaction are: the opportunity of easy communication with classmates/teacher (N=7), ease of feedback (N=5), information sharing (N=3), instant communication (N=2), the opportunity of interaction (N=1) and following up the classmates (N=1). In this context, the statements given by some students are shown below.

*Student 2: "To me, social media is an important part of the method applied. With social media, the teacher has the opportunity to reach the students not only at school but any time"*

*Student 9: "The teacher can give homework assignments through social media, or if students have questions, he can answer them. Also, social media is used by everyone. It is certainly an efficient tool because it provides communication with the teacher"*

*Student 1: "I think that this method is very necessary because it provides direct and instant communication. Most importantly, because you come to the class having already watched the videos, social media is also important in terms of preparation as well"*

*Student 10: "We get feedback more easily thanks to our Facebook group"*

*Student 7: "We have Facebook groups. And there is a YouTube channel where the course videos are uploaded. We have sent our homework and accessed to the course materials from these channels. That is to say, social media gives us opportunity to share information"*

Görü Doğan (2015) gets students' views and experiences with respect to teaching the courses with the social media supported flipped classroom approach. It was found in this study that one of the positive aspects of supporting the course with social media is that it provides more interaction and communication opportunities between the teacher and student. The findings in both studies are consistent with each other. Social media is one of the most popular communication tools of today and it enables people to interact and collaborate (Öztürk & Talas, 2015).

On the other hand, there are other studies that are at odds with the findings of this study (Stone, 2012; Herreid & Schiller, 2013). For example, in a study by Turan and Göktaş (2015) based on student views, the negative aspects of the flipped classroom method were found to be the excessive time that should be allocated for the course and lack of instant feedback. Based on this, it can be argued that supporting courses that are designed based on the flipped classroom method with social media may enhance in/non-class communication and interaction.

#### *5.2.1.2. Facilitating of Learning*

As shown in Table 3, students stated that one of the positive aspects of the method is that it facilitates learning and provides access to the course content anytime and anywhere (N=10). Other important reasons were stated as: easy course follow-up (N=6), the chance to watch the course videos for multiple times (N=6), the possibility of well-preparation (N=4), provision of permanent learning (N=3) and the opportunity to learn the topic before

coming to the class (N=2). Some of the important expressions of the students regarding these findings are given below.

*Student 4: "Thanks to social media, we can access the course content from anywhere and anytime. In other words, we learn the topics while drinking coffee at our comfy houses"*

*Student 11: "The most important aspect of social media is that we can follow the course conveniently. We just watch the video and learn, that is, we come to the classroom having already learned the topic."*

*Student 12: "The biggest advantage of this method is to have the chance to watch the course videos over and over"*

*Student 3: "This method ensures sustainable learning with in-class and non-class activities. Besides, we can learn from the videos without coming to the classroom"*

According to the findings of the study, it is seen that the social media supported flipped classroom method facilitates learning because of its advantages such as easy access to resources, easy course follow-up, possibility of watching the course video for multiple times, possibility of coming to class prepared and ensuring sustainable learning. When the related literature is reviewed, there are studies showing that the involvement of social media in educational processes facilitates students' learning and it is an effective tool in learning (Toğay, Akdur, Yetişkin, & Bilici, 2013; Sarsar, Başbay, & Başbay, 2015;). In addition, there are also studies reporting that the flipped classroom method facilitates learning more than the traditional teaching methods (Turan, 2015; Gençer, 2015; Betül, 2016; Yavuz, 2016;). It can be claimed that the advantages of online learning such as sharing the course content via social media and providing students with the opportunity to watch videos anywhere and anytime facilitate learning.

#### *5.2.1.3. Enhancement of Motivation*

Participants stated that another positive aspect of using the social media-supported flipped classroom approach was its enhancing of their motivation. Factors that enhance students' motivation were found to be the method's being stimulating (N=12), funny (N=9) and interesting (N=8). Some of the most important statements by the students in this respect are presented below.

*Student 6: "The positive side of this method is Kahoot application we do in the class. This both makes us prepare before coming to the class and enhance our motivation for the class"*

*Student 8: "I think it is a very funny method. We are learning by having fun"*

There are several studies showing that teaching processes enhance student motivation through social media in the respective literature (Sobaih, Moustafa, Ghandforoush, & Khan, 2016; Mao, 2014; Raspopovic, Cvetanovic, Medan, & Ljubojevic, 2017;). There are also experimental studies showing that teaching by the flipped classroom method enhances motivation. For example, Asiksoy and Özdamlı (2016), Turan (2015) and Tuğun, (2015) examined the impact of the flipped classroom method on the motivations of students. The motivation levels of the students in experiment groups were found to be higher. In the flipped classroom method, which is considered a kind of the mixed-methods (Staker & Horn, 2012), a number of methods such as video-based learning, cooperative learning, gamification, social media supported learning can be used simultaneously. It can be argued that gamification activities such as Kahoot might have enhanced students' motivation given that it was found to be funny and stimulating by the students.

#### *5.2.2. Negative Aspects of Supporting the Course with Social Media*

The students were asked about the negative aspects of supporting the programming language course designed based on the flipped classroom method with social media and the answers are shown in Table 3. The majority of the students stated the distraction caused by ads and notifications as the negative aspect of supporting the course with social media (N=15). In addition, irrelevant and negative comments (N=7), internet connection requirement / excessive internet usage (N=6), and the feeling of constantly being monitored (N=2) were stated as other negative aspects. Some of the important statements by the students in this respect are as follows:

*Student 13: "The negative side of this method is getting a notification from Facebook in the middle of a class activity, or pop-up ads while watching a course video on YouTube This is distracting us, and diminishing our motivation"*

*Student 14: "Some of my friends are sharing irrelevant comments, just to fool around. I think this is a negative aspect"*

*Student 15: "In order to follow this course we need to have a computer with internet connection. It is very difficult to follow the course especially if you do not have internet connection. I think this is the negative side."*

*Student 8: "As a negative aspect, adding our teacher as a friend to our social media account gives me the feeling that I am constantly being watched"*

*Student 1 “My problem with videos is the internet. Since I don't have Internet at home, I have to watch videos on the phone, and I can't watch them when the Internet package is slow”*

Some of the participants (Student 13, Student 1 etc.) reported that they were distracted by the advertisements or notifications that they encountered while watching videos on social media. In addition, some of the students stated that irrelevant posts via Facebook and the need for internet connection are the negative aspects of this method. (Betül, 2016; Yavuz, 2016; Turan & Göktaş, 2015) found that the presence of technological deficiencies such as lack of internet and computers are negative aspects of the flipped classroom method. The findings of both studies are consistent with each other.

### **5.3. Students' Views on the Videos Shared via YouTube and Facebook**

The data obtained through the questions about the videos shared on the social media regarding the programming course taught based on the flipped classroom method are handled in 4 different categories as problems encountered with the videos, student suggestions about the videos, sharing time of the videos and the incentives to watch the videos.

#### *5.3.1. Problems Encountered with the Videos*

**Table 4:** Students' Views on Problems Encountered with the Videos

<b>Category</b>	<b>Code</b>	<b>f</b>
Problems encountered with the videos	Technical problems	10
	Internet data plan	7
	Teaching is not fluent	2

In this category, students were asked about the problems encountered with the videos and the data obtained are shown in Table 4. Accordingly, majority of the students stated that they had technical problems (N=10) with the videos. Other problems that come to the forefront are internet data plan (N=7) and the lack of fluency in the teaching (N=2). Some student statements in relation to these findings are given below.

*Student 2: “We experienced some problems while watching the videos. These were technical problems such as video resolution and audio. Then our teacher reloaded the videos and solved the problem”*

*Student 16: “My concern is about exceeding my data plan while watching the videos”*

*Student 4: "The teaching of the teacher was not fluent in some of the videos. I think it could have been in a conversational manner with us"*

The finding of this study with respect to technical problems such as resolution or audio which was found in this study, concerns about exceeding the data plan while watching the video, and getting bored when watching are consistent with the findings of the studies conducted by Milman, 2012; Yavuz, 2016; Turan, 2015. Given these results, it can be argued that the primary problems with the videos stem from technical issues.

### 5.3.2. Student Recommendations Related to the Videos

**Table 5:** Student Recommendations Related to the Videos

Student Recommendations Related to the Videos	Videos should involve the teacher's footage	9
	Videos should be montaged	5
	Quizzes or games should be added after the videos	4
	Records should be made in studio environment	2
	Videos should be interactive	1

Table 5 contains data on students' views on the videos shared on YouTube and Facebook. Students' recommendations related to the videos involve: adding the teacher's footage in the videos (N=9), montaging the videos (N=5), adding quizzes or games after the videos (N=4), recording the videos in the studio environment (N=2) and making the videos interactive (N=1). Some of the important student statements in this regard are as follows:

*Student 7: "As in the last video, the videos should contain the footage of the teacher. Because it is more useful to study by looking at someone with gestic and mimics, instead of looking at the empty space"*

*Student 8: "The records should be montaged with a faster computer"*

*Student 11: "Quizzes, games, tests and fill-in the blank applications can be added immediately after the videos to consolidate the topics taught"*

In a study by Turan (2015), which is similar to this study, students suggested that teacher's footage and surprise questions should be included in the videos and the videos should be interactive. It can be said that as a solution to the technical problems experienced during the teaching process of the course, the students suggested that the videos, especially the footage of the teacher, should be included in the videos, the recordings should be

made in the studio environment, and games should be added lest the videos become boring.

### 5.3.3. Student Recommendations Related to the Videos

**Table 6:** Student Recommendations Related to the Videos

	Should be posted 1 week in 9 advance
	Should be posted 4 days in 3 advance
Sharing time of the videos	Should be posted 5-6 days in 3 advance
	Should be posted 3 days in 1 advance
	Should be posted 1 day in advance 1

The students were asked how many days before the course the videos should be shared on social media and the data obtained are shown in Table 6. The majority of the students stated that the videos should be posted "1 week in advance" (N=9). Other opinions are that the videos should be posted 4 days before the course" (N=3), "5-6 days before the course" (N=3), "3 days before the course" (N=1) and "1 day before the course" (N=1). In this context, the statements given by some students are shown below.

*Student 16: "I think that the videos should be shared 1 week before the class so that we can be prepared for it by watching the videos"*

*Student 3: "It is sufficient to upload 5-6 days before the course. Because we may not be able to watch it when it is shared 1 day or 2 days in advance"*

*Student 5: "I also think that the posting time of the videos may be 4 days before. We can have problems if they are shared 1 day in advance"*

Given the students' recommendation regarding the timing of the video posts, it can be said that course videos should be shared via social media 4 days to 1 week in advance of the class.

### 5.3.4. Factors Stimulating Students to Watch the Videos

**Table 7:** Student Views on Factors Stimulating them to Watch the Videos

Factors Stimulating	Kahoot Activity	15
Students to Watch the	In order to perform the	10
Videos	activities in the class	
	In order to learn the	7

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subject	
In order to get a high grade	6
Competition	2
In order to keep up with the course	1

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The students were asked to mention their opinions about the factors that stimulated them to watch the videos shared on social media and the data obtained are shown in Table 7. Accordingly, the majority of students stated that Kahoot activity (N=15) was an incentive for watching the videos. Other factors are mentioned to be: performing the activities in the class (N=10), learning the subject (N=7), getting high grades (N=6), competition (N=2) and keeping up with the course (N=1). Some important expressions mentioned about these findings are presented below:

*Student 3: "It can be said that the factors that urge us to watch the videos are Kahoot activity, group work, achieving in the classroom activities and getting high marks and learning the subject"*

*Student 2: "The factors that stimulate us to watch the videos are learning the subject of the class, the aim of performing the activity in the class and Kahoot activity"*

*Student 11: "It is the drive not to fall behind in the class, because when a question is asked in the classroom, or an activity is performed, if you do not know the subject you fall behind, and it is not good"*

There are studies supporting the findings of this study in the literature. Milman (2012) reports that gamification activities urge students to watch the videos in the flipped classroom method. In another study by Turan, (2015) the factors stimulating students to watch the videos in the flipped classroom method are enumerated as: the student's desire to learn the subject, quest for performing the in-class activity easily, and certain games added in the videos.

#### ***5.4. Factors Enhancing/ Diminishing the Interest in the Course***

The students were asked about the factors that enhance and diminish their motivation for the programming language course which is taught based on the social media supported flipped classroom method and the data obtained are presented in Table 8.

**Table 8:** Views of Students on the Motivation towards the Class

Category	Code	F
Factors Enhancing Motivation towards the Class	Kahoot Game	14
	Announcement of the top 5 students of the Kahoot activity on social media	10
	Getting bonus points from the in-class activities	9
	Opportunity to watch the course videos for multiple times	3
	Group work	3
	Teacher's innovative approach	3
	Rapid knowledge sharing via social media	1
Factors Diminishing Motivation towards the Class	Getting a high score at Kahoot activity, but failing to be in the list of students announced on social media	5
	Failing to participate in the in-class activities when the videos are not watched	3

Participants were asked about the factors enhancing their motivation towards the class and, as shown in Table 8, the most frequently cited factors are “Kahoot game” (N=14), “Announcement of the top 5 students in Kahoot on social media“ (N=10) and "earning bonus points from the activities" (N=9). On the other hand, it was found that the opportunity to watch the course videos for multiple times (N=3), group work (N=3), teacher's innovative approach (N=3) and rapid information sharing via social media (N=1) are other factors enhancing motivation towards the course. Some of the important expressions mentioned by the students are given below:

*Student 1: “The foremost factor enhancing our motivation towards the course was the Kahoot activity, in my opinion. Of course, announcement of the top 5 students on the social media is honoring us. At the end of the day, these posts are also viewed by our friends and other teachers as well”*

*Student 11: “I think that the bonus points earned from the Kahoot and other activities is the most important element enhancing our motivation towards the course”*

*Student 14: "I cannot attend the class because I am working. So, I can say that to have the opportunity to learn the course from the videos and to watch the courses over and over enhances our motivation"*

*Student 6: "I didn't want to come to the class at first, because I didn't like the programming course. But later on, Kahoot, group work and our teacher's innovative approach increased my motivation towards the course, and I started to attend the classes"*

As shown in Table 8, factors diminishing the students' motivation for the class were found to be "Getting a high score at Kahoot activity, but failing to be in the list of students announced on the social media" (N=5) and "failing to participate in the in-class activities when the videos are not watched" (N=3). Some of the important statements of the students about the subject are as follows.

*Student 16: "I am demotivated when I can't make it to the top five at Kahoot. Because, you share it on social media. But, in the meantime, I am getting more ambitious"*

*Student 8: "If we come to class without watching the videos, we have a hard time doing the activity in the classroom. Since we are graded from the activities, it can sometimes diminish our motivation for the class"*

There are other studies that comply with the findings of this study. Balakrishnan & Gan (2016) and Betül, (2016) report that Kahoot activity enhances motivation for the learning processes. In addition to that, Turan (2015) shared the top 5 students of Kahoot activity on Facebook in a course that administered the flipped classroom method, and the most popular factor in the end-of year student evaluations was reported as Kahoot activity. In another study by Özyurt & Özyurt (2016) it is suggested that Facebook can be used effectively to support teaching methods and that it considerably enriches learning experiences. Fulton (2012) states that students' watching the course videos at home whenever they want enhances their motivation. According to the opinions of some of the students in this study, sharing the results of Kahoot activity on social media may be a demotivating factor too. According to all these findings, it can be argued the entertaining and competitive, gaming notion included in Kahoot and honoring and rewarding successful students on social media, enhance the motivation for the course whereas it can be demotivating for some of the students who fail to come out in these activities.

## **6. Conclusion and Recommendations**

### ***6.1. Conclusion***

It is seen that one of the next generation teaching models for the digital citizens, as Prensky (2001) puts it, to acquire the skillsets of the 21<sup>st</sup> century is the flipped class method. When the research on the flipped class method is examined, it is seen that students are willing and positive towards the method, that it enhances their motivation and academic success and facilitate the learning process, and that theoretical knowledge is given out of the class and high-level cognitive learning activities are performed in the classroom. However, due to some limitations of this method, the educational videos prepared may not be not watched, the process cannot be controlled by the teacher, and it is very difficult for the student to ask questions and get feedback in the activities performed outside the classroom. In order to find a solution to the said limitations, the flipped class method was supported by social media and it was aimed to get students' views on this application.

According to the findings obtained in this study, it was found that students general and the final thoughts about the social media supported flipped class method are positive, although the initial thoughts of the students were negative, that it improves the communication and interaction in and outside of the classroom, facilitates learning and enhances motivation. On the other hand, distraction due to advertisements and notifications on social media, irrelevant negative comments, need for internet connection or excessive use of internet and the feeling of being under constant surveillance were found as the negative aspects of this method. When the students' suggestions about the videos are examined, the most prominent findings are the requests for inclusion of the teacher's footage in the videos, montaging of the videos, inclusion of supplementary quizzes or games after the videos. In addition, the students think that the videos should be shared at least 4 days to 1 week in advance of the class via Facebook and YouTube. Moreover, the majority of students point out Kahoot activity as the foremost incentive for them to watch the course videos. Other important factors urging the students to watch the videos are having the opportunity to perform the activities in the classroom, learning the subject and earning high grades.

It was found that the Game, announcement of the results of the activities on social media and having the chance to get bonus points at the end of the activities are the motivating factors for students towards the course. On the other hand, the demotivating factors are the disclosure of the

students, who fail to come out in the activities, on social media and failing in the in-class activities when the videos are not watched.

According to the findings of this study, it can be argued that promotion of the flipped classroom method with social media can bring about a solution to especially such limitations as students' not watching the videos, students' asking questions in extracurricular activities, and lack of an environment where students can get instant feedback.

## **6.2. Recommendations for Future Research**

The following recommendations can contribute to a more comprehensive implementation of the flipped classroom method in the teaching processes:

- Students can be given explanatory information about the application and advantages of the flipped classroom method in the teaching processes to prevent negative thoughts that may occur in students at the beginning of the semester.

- In this study, it was found that supporting the course with Facebook and YouTube increases teacher-student communication, but advertisements and notifications on social media may distract the students. In this context, different social media platforms that can find solutions to the problem can be found out.

- In order to eliminate the limitations of videos, videos with no ads, high audio and video quality, and surprise questions or games can be posted to the students. Further research can be conducted in this context.

- In this study, it was found that gamification activities such as Kahoot encourage students to watch the course videos. Research can be conducted on large-size groups about supporting the flipped classroom method with different gamification practices and teaching approaches.

- Teachers must have the necessary qualifications to effectively implement the flipped classroom method. Policy-makers may include more subjects in the curriculum, such as computer literacy and next-generation teaching approaches in teacher training programs.

- Necessary technological infrastructure can be prepared for the successful implementation of this method in schools.

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## Biodata

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