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Determining Visions Related to the Flipped Learning

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Abstract

The purpose of this research is; to determine the views of academicians, teachers and students where the flipped learning model is applied. In this research, the case study was adopted from the qualitative research designs. The study group of the research consists of eight teachers who work in a private high school, five teaching members who work at a private university and 21 students who study at the same university. In data analysis, the content analysis method is used. The data are coded separately by the researchers and the obtained codes are organized by the researchers and collected under the themes. And the themes presented in tables form. At the end of the research, it was presented how the features of flipped learning model (basic features, positive features, negative features) and its application process (planning, material preparation, learning, teaching process, evaluation) is and various suggestions have been developed.

Keywords

Flipped Learning Model Anahtar
Student-Centered Education
Academician' Visions
Teachers' Visions
Students' Visions

About Article

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Ters Yüz Öğrenme Modeline İlişkin Görüşler

Özet

Bu araştırmanın amacı; ters yüz öğrenme modeli uygulanan okullardaki öğretmen ve öğrenci ve akademisyenlerin bu model hakkındaki görüşlerini belirlemektir. Araştırmada nitel araştırma desenlerinden durum çalışması deseni benimsenmiştir. Araştırmanın çalışma grubunu özel bir ortaöğretim kurumunda görev yapan sekiz öğretmen, özel bir üniversitede görev yapan beş öğretim üyesi ve yine aynı üniversitede öğrenim gören 21 öğrenci oluşturmaktadır. Verilerin analizinde içerik analizi yöntemi kullanılmıştır. Elde edilen temalar tablolar halinde sunulmuştur. Araştırma sonunda ters yüz öğrenme modelinin özellikleri (temel özellikler, olumlu özellikler, olumsuz özellikler) ve uygulama sürecinin (planlama, materyal hazırlama, öğrenme öğretme süreci, değerlendirme) nasıl işlediği ortaya konulmuş ve çeşitli öneriler geliştirilmiştir.

Anahtar Kelimeler

Ters Yüz Öğrenme Modeli
Öğrenci Merkezli Eğitim
Akademisyen Görüşleri
Öğretmen Görüşleri
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Introduction

Today, especially with the widespread of internet, computers and mobile devices, there has been a great development in the production of information, and this era is now called information age. The educational world is also affected by these developments and has started widespread of using technology in education. These developments in the world also differentiate the student profile at schools and the expected results from education (Turan & Göktaş, 2015). Today, the society of the demands of school, the innovations of manufacturing world and the multiple needs of new generation face serious challenges at the point of meeting (Pinnelli & Fiorucci, 2015).

That is the reality that cannot be denied and has been changed radically. In addition, this change is an irreversible change. This era is now called the digital natives' era. If the digital immigrants want to give education to this new generation, they have to develop new strategies appropriately with this new generation learning styles (Prensky, 2001). To develop the effective learning practices, the time of the students and developing new strategies that can direct towards learning about energies remained necessary (McCallum, Schultz, Sellke & Spartz, 2015).

The wide use of information technologies and social media networks in education can be defined as the third Renaissance period. To study the learners of this period, the diversified, the different and the dynamic learning environments are necessary (Wu & Li, 2015). It is seen that these new generation technological learning environments prefer multi-tasking and collaborative group activities in the classroom environment (Roehl, Reddy & Shannon, 2013). When teachers effectively integrate information technologies into their own teachings, there will have already created interesting learning environments for students who have already adopted and widely used technology in their lives (Danker, 2015). One of the teaching ways that require the use of technology in education is the blending learning.

The blending learning is a mixed approach which is used together with face-to-face training and the distance education. The internet-based learning environment allows the face-to-face learning environment to receive guidance assistance on topics, which students do not understand while creating a learning environment outside of the classroom (Hughes, 2007). The blending learning system, which is a system that increases diversity in classroom activities and increases the creativity of the educators by forcing them to find new activities, and provides opportunity for students to understand face to face at the time of the information given to them and also allows them to develop their individual learning skills (Gençer, 2015).

The relevant basics for the implementation of the flipped learning model (FLM), which can be considered as an inverted form of the blending learning, was taken by the professors of economics who taught in the fields of (sociology, psychology, philosophy, law, etc.) with a lot of reading assignments in Miami University (Lage, Platt & Treglia, 2000). Later on, this method is started as an online lecture for students who missed classes of Jonathan Bergmann and Aaron Sams who work as teachers at Woodland Park High School in the Colorado State. This practice attracted attention of other teachers and they started to use this system in a short time. This approach, which emerged and implemented in a small town, soon began to be heard all over the country (Bergmann & Sams, 2012). This method has become popular and its use is rapidly spreading in secondary schools, high schools and higher educational institutions as parallel with advances in information and technology (Chen & Summers, 2015; Reyna, 2015).

In traditional classroom environments at every level of education, a large part of the lecture takes place in the form of explaining and making a statement of the teacher. Students spend class duration by listening to the teacher and taking notes, and then using these notes as references when making homework (Egbert, Herman & Lee, 2015). The situation of giving lessons in the classroom environment of traditional education concept and making homework outside of the classroom are totally converted in the FLM (Wallace, Walker, Braseby & Sweet, 2014). FLM is a pedagogical approach that created a student learning centre environment and stands on the student participation and that emphasizes the use of educational technologies and collaborative learning (McCallum et al., 2015; Reyna, 2015; Westermann, 2014). FLM is brought together about major changes in terms of both students' roles and teacher's role. With this method, students learn the contents of the lesson during off-class times and prepare for the activities to be done in the classroom. Teachers serve as guides in the classroom, lectures videos, teaching texts, reading texts, presentations and so on by using different materials and they perform at the outside of the classroom (Turan & Göktaş, 2015).

The researches showed that the FLM positively affects the attitudes and motivations of the students towards the lesson (Barber, 2015; Boyraz, 2014; Chen, She, Kameda & Ohno, 2015; Clark, 2015; Gross, Hoffman & Burke, 2015; Heyborne & Perrett, 2016; Ojennus, 2016; Tawfik & Lilly, 2015) also showed that the increase of student achievement (Baepler, Walker & Driessen, 2014; Boyraz, 2014; Donovan & Lee, 2015; Girmen & Kaya, 2019; Green, 2015; Harvey, 2014; McCallum et al., 2015; Moravec, Williams, Aguilar & O'Dowd, 2010; Tomory & Watson, 2015; Whitman Cobb, 2016).

It is thought that knowing the positive-negative aspects and the application process of the FLM, which is known to have a positive effect on students' academic success and attitude, will be beneficial for teachers and academicians who will use this model. In this way, necessary precautions can be taken and planning can be done more effectively before using this model.To occur the expected transformation in the education system, first, the teaching staff, teachers and students are needed to adopt these changes of the education system.

The purpose of this research in this context is; to determine the views of academicians, teachers and students where the FLM is applied. This basic purpose has searched answer from the following questions in the framework.

1. What are the features of FLM?
2. How the implementation process of FLM is handled?

Method

This section includes; research model, study group, data collection, data analysis, validity and reliability.

Research Model

In this research, the case study was adopted from the qualitative research designs. According to Yin (1984), case study is a research method that examines what is researched in its own life frame; the boundaries between case and environment are not clear with certain lines and used when there is more than one evidence or data source available. In this study, it is thought that the selection of the case study pattern is appropriate since it is aimed to examine the features of the FLM and the application situations of the model in practice.

Study Group

The study group of the study was selected using the criterion sampling method, which is one of the purposeful sampling methods. Maxwell (1997) defined purposive sampling as a type of sampling in which, ''particular settings, persons, or events are deliberately selected for the important information they can provide that cannot be gotten as well from other choices''. The criterion used in determining the working group is; for teachers and academics, to apply this model in their own teaching and for students, to be educated with this model.

The study group of research consists of eight teachers (5 female, 3 male) working in a private high school implementing the FLM in Istanbul, five academicians (3 females, 2 males) working in a private university that also provides education with a FLM in Istanbul, and 21 students who attend to the same university. 9 of the students are law students and 12 of them are foreign language students.

Data Collection

Meeting, focus group discussion and observations were used as data collection methods in research. Focus group discussion was held with three academicians working at the private university. At the same university, two courses (law and foreign language) were observed by the two researchers, and at the end of the lesson, two separated focus group discussions were held with nine law students and 12 foreign language students. Afterwards, semi-structured meetings were held with two academicians who gave lectures. At a different time, a private high school that applies the FLM was visited and focus group discussions were held with eight teachers at school.

To collect the research data, semi-structured interview forms prepared for academicians and students were used. The participants were asked the following questions:

- ✓ Can you describe the FLM?
- ✓ What are the essential components of this approach?
- ✓ What are the advantages of this approach?
- ✓ How do you plan the lesson according to this approach?
- ✓ What are the problems you encountered before the lesson?
- ✓ How does this method affect your workload?
- ✓ What are the responsibilities of students in this model?
- ✓ What materials do you use in the pre-lesson period?
- ✓ Have you received any training on material preparation?
- ✓ What are you doing during the class?
- ✓ What are the problems you encounter during the lesson process?
- ✓ What are the disadvantages of this method?
- ✓ How do you evaluate the students?

Unstructured observation notes were taken during lesson observations.

The focus group discussions and semi-structured interviews were recorded with voice recorder and these records were transferred to the computer environment in writing.

Data Analysis

In data analysis, the content analysis method is used. The content analysis provides specific concepts similar to each other and makes the readers to understand and interpret in a style by bringing them together in the framework of themes (Fraenkel & Wallen, 2000; Yıldırım & Şimşek, 2011). The researchers code the data separately and the obtained codes are organized and collected under the themes. The themes are presented in tables form.

Validity and Reliability

While the concepts of "validity" and "reliability" are used in quantitative research, the concept of "trustworthiness" comes to the fore in qualitative research. The following concepts are considered as basic criteria for reliability (Lincoln & Guba, 1985):

Credibility: It was tried to provide long-term interaction with the participants. For deeply focused information, the data were repeatedly read by the researchers, categories were created, and the relationships and differences between the categories were examined repeatedly. To ensure the credibility of the findings, two different data collection techniques were used and triangulations was performed. The analysis process of the research was carried out by two researchers, and an analyst diversification was made.

Applicability/Transferability: In order to ensure the transferability of the data, the research process has been described in detail and reported.

Consistency/Reliability: To calculate the reliability, the reliability formula of Miles and Huberman (1994) is used and the coefficient of correspondence between the coders was 87.78%. Above 70% compliance coefficient of the researches are accepted reliable (Miles & Huberman, 1994). These result shows that the research is reliable. Expert opinion was received in relation to research data and research results.

Objectivity/Verifiability: The interpretation of the data was objectively treated and the judgments of the researcher were not reflected in the research. The process from the beginning of the research to its reporting has been transparently defined. Objectivity-verifiability is also supported by direct quotations from the data. The raw data of the research has been stored to be examined when necessary.

Findings

Findings are presented under two main headings: "The Features of the FLM" and "Application Process of FLM".

The Features of FLM

The features of FLM are examined into three parts: "Basic Features", "Positive Features" and "Negative Features".

Basic Features

The basic features of FLM are summarized in Table 1:

Table 1. Basic Features

Student centered understanding
Individualized education
Cooperative learning
Active learning
Mastery learning
Permanent learning
The understanding that anyone can learn
Learning by doing and living
Learning while having fun
Education beyond the limits (school wall)
Transformation of class into a workplace and laboratory

When Table 1 is examined, it is seen that the FLM is a developed model in accordance with constructivist and student-centred education understanding. The FLM is largely different especially from traditional understanding in terms of student roles. It is emphasis on learning in a collaborative way by doing, living and amusing in FLM. This situation was expressed by one of the teachers who made interview: "For *many years in our mind, there was a type of teacher who was in front of the board and talking constantly. We all graduated in that way. It is completely reversed. Means we all students always talking about student learning center but it is impossible in a place where the teacher explained constantly. Flipped learning provides facility to this*."

In the FLM, the use of active learning and full learning strategies is emphasized in learning process. The FLM that forces educators to add diversity in classroom activities and to increase the creativity of students and allows students to develop their individual learning skills. In addition, it also allows students to be able to learn independently of time and space without being trapped between school walls. This situation was expressed by a teacher as: "*We can say that education is not just imprison into school walls, but for this model, we can call education beyond the limits*."

The Positive Features

The positive features of FLM are summarized in Table 2:

Table 2. The Negative Features

Pre-Lesson Process	In Terms of Students	Start learning before lesson
		Coming to the class with a certain level of knowledge
		Coming to the class as the feeling of learning is triggered
		Coming to the class by knowing which topic will be processed
		Learning the basics of topic before the class
		Coming to the class by noticing the missing
		Students can learn whenever and wherever

		they want
		Coming to the class with fewer question marks
		Lessons could be prepared in a short time
		The topics do not accumulate and learning deficits do not occur
	In Terms of Teacher	Can test whether topics are learned or not
		Can give feedback to students
During Lesson Process	In Terms of Students	Learning while having fun
		Participate in class actively
		Increasing the rate of understanding topic
		Increasing the learning responsibility
		Increasing the communication with friends through group work
	In Terms of Teacher	Making less workload
		To be able to reach the topics
		Increasing the communication with student
		Classroom environment can be arranged according to the student needs
		Getting time to make practice/activities
		Getting lesson from the monotonous
Post-Lesson Process	In Terms of Students	Can make up missed lessons
		Increasing persistence what students have learned
		Preparing more easier for exams
		Increasing the success of the exams
Attitude Motivation	In Terms of Students	Coming to the class fondly
		Attending the class willingly
		Feeling obligated to learn
		Enjoying learning
		Increasing motivation
		Decreasing the lack of attendance
		Increasing the awareness of responsibility
		Seeing the teacher valuable
	In Terms of Teacher	Developing him/herself continuously
		Following the technology

	Increasing the creativity
	Satisfying the job
	Enjoying teaching
	Feeling him/herself special

In Table 2; the positive features of this model are examined into five chapters; pre-lesson process, lesson process, after lesson process, student attitude/ motivation and teacher attitude/motivation.

It can be said that the positive features that students out in the pre-lesson process comes from the preparation of student. Before class, student comes to the class by learning the basic concepts and the main points of the subject, as the feeling of learning is triggered and in awareness of missing learning. A law student who participates in the discussion as expressed this situation: "*When we come to the class, having an idea about the topic increases student participation in class". At the same time, there are no big question marks in our minds when processing lesson. It is a very good thing for us to ask the teacher a few details and missing information from our mind".* In addition, students complete their preparations in accordance with their individual speeds without time and place restriction before the class.

During the lesson, students can learn by enjoying and can participate actively in student-centered classroom environment by using multiple teaching methods and techniques. Through group work, students can share their ideas and can establish effective communications. A teacher who participated in the discussion expressed his idea on this topic as: *"The class is now becoming a place to perform activities, to pass active production, to solve problems, to make collaborative group working and for production".* In the process of after lesson, it is possible to compensate the lecture for students who cannot attend the class for various reasons. In addition, making easier for students in preparing their exams and increasing the success of the exam.

With this model, students win a positive attitude against lesson and learning. The statements from an interview with a teacher supports this idea as: "*A child who is ready to learn and has a high level of reading comes to the class and in this way, instead of filling the blank sheet with the teacher, he can enter the class with events like : let's do it together, let's investigate, let's run to the business association".* In this model, the teacher wins motivation by enjoying teaching, experiencing job satisfaction and developing him/herself continuously, and by following the technology. An interview with a teaching member said on this topic like that: "*This model allows the teacher to develop him/herself. You have to follow the technology as well as follow the students. You are learning new things and you are using technology for effective teaching. Working in a way of student-centred keeps you strong and healthy. Teaching techniques are changing and you are following them too."*

The Negative Features

The negative features of FLM are summarized in Table 3:

Table 3. The Negative Features

Pre-Lesson Proces	In Terms of Student	Learning overload before class
		May not come to the class when video is not watched
		Can tell that I have watched the video although the video is not watched yet
		Can prefer being beside the teacher while learning
		Question cannot get the feedback instantly
		It needs technological possibilities
		Technology can have harmful effects
	In Terms of Teacher	Taking video takes a lot of time
		Video shooting is stressful and difficult
		The teacher doesn't feel natural during the video shooting
		Difficult to prepare material
		Planning lesson takes a lot of time
		Planning lesson requires creativity
		Workload becomes double
		Making the necessary follow-up over the system takes time
Lesson Process	Being a Crowded Class	Classroom management is difficult
		Decreasing Audit
		Decreasing quality
		Confusion comes out
		Some students are disconnected from lesson
		There is a time problem
		Teacher cannot take time to all students
		All students cannot attend the class
		Cannot make group working
		However, can make question and answer
	Management of Learning Process	Time management is difficult
		It is difficult to provide student participation in the events
		It is difficult to provide student motivation
	Coming to	It breaks the lesson plan

	the Class without Preparation	No participation in the event
		It makes difficult to understand lesson
		It occurs uncompleted learning

In Table 3, it is seen that there are some negative features in pre-lesson and during the lesson processes of FLM. There are different challenges for teachers and students in pre-lesson process. Teachers stated that the preparation of material and lesson plans took a lot of time and is difficult, and the workload before the class was doubled. An academician who was interviewed as follow expressed this situation; "*This model has increased our workload. Because you are asking a question from previous lesson, having a break, saying something to the student. However, this model; how long will I tell? What should I tell? What activities should I do? It takes times to plan these things".* It is seen that the FLM is highly depended on technology, the pre-lesson learning load of students, and the inability to get the feedback of the students are the negative features that affect students.

In the lecture process, the most basis problem of FLM is students participating in lessons and activities without preparing lessons or videos. A teaching member expressed his opinion about this topic as: "*There is a problem dealing with operating students. We need to train them to watch the video in our system. But if you cannot guide students to watch video, you also don't need to beat them. I don't want to break notes either. Did he watch or not? Because sometimes students said that, he has watched. For example, I ask a question. Student who has watched video could be able to give a clear answer*". The difficulties in managing the effectives learning process are also considered as negatives of this method. Also, in the crowded classrooms, classroom management and time management has noted that it is difficult to do group work and this model cannot be effectively implemented.

Application Process of the FLM

The application process of FLM is divided into four parts; "Planning", "Material Preparation", "Learning Process" and "Evaluation Process"

Planning Process

The planning process is summarized in Table 4:

Table 4. Planning Process

At the Beginning of the Semester	Conduct meetings with the flipped learning commission
	Preparing annual plan
	Sharing plans with students at the beginning of the year
	Watching different videos for creativity
	Uploading videos to the system
	Videos are arranged according to the annual plan
During the Semester	Making the module plan (7 weeks)
	Making weekly plan
	Making daily plan

	Updating plans according to the feedback from students
	Determining questions to ask students

As shown in the Table 4, the workload of the teacher is considerably higher in the planning process. Planning is made for yearly, weekly and daily. The teacher prepares updates and installs videos at the beginning of the year. The teacher makes daily plans, prepares update and assign tasks for the students before each lesson. A teaching member who was interviewed as expressed this situation: "*It's not a matter of taking 7-8 minutes while taking video. The matter is making ready to be able to shoot video. You have to be creative. It must be interesting. You should set up groups for the lesson, should set activities according to the levels of group. It takes time to prepare a lesson plan. Did the students watch the video or not, how will you do quiz, do they need more stuffs or feedbacks, have any questions? All of these are consuming time*."

Material Preparation Process

The material preparation process is summarized in Table 5:

Table 5. Material Preparation Process

Video	Preparation/ Updating	Videos are being taken by using computer, webcam, camera, studio, microphone, classroom environment, board, smart phone.
		Archiving videos
		Can use ready made videos
		Videos can be edited
		The quality of some videos is low
		Updating videos if videos are not being watched
		Videos are updated if content changes
		Videos can be used in other years if updating is not required
	Content	Prefer short videos
		Long videos distract students
		It needs to be adjusted the content dose
		Trying to make videos interesting
		Short film, graphics, quizzes and questions can be placed between videos
		Highlighting important points in video
		Some videos can only be formed from slides
		Videos are highly focused on expression
		Only narrative-focused videos are not effective

	Tracking Status	60% of students watch the video
		Exam time videos are absolutely watched
		Telling to close the video will increase the coverage rate
		Students who do not want to be passive come to the class by watching videos
		Teachers can follow the situation from the platform
Used Programs		Blackboard-learning platform
		Vitamin-learning platform
		Lisego-learning platform
		Preparing Microsoft Officemix-Online slides/presentation
		Onenote-Online digital notebook
		Youtube-Video program
		Camtasia-Video capture program
Other Materials		Online textbook
		Powerpoint presentations
		Photos/Posters/Animations
		Newspaper news
		Textbooks
		Reference books
		Discussion and practical papers
		Dialogue texts
		Corner writings
		Articles
		Tests
		Questions
		Website proposals
		PDF

In Table 5, it is seen that a large variety of materials are used in the FLM. The most used material is video. Teachers can use ready-made videos or they can shoot video themselves. An interview with a teacher about this topic gave the following informations: "*We use the vitamin training platform and we already taken our ready made videos from there. Apart from that, we have our own videos or we have videos from different places or we have different materials. Last year we took videos with mobile phone. This year we use Lisego as a learning platform in high school. The archive is formed after a certain point and we have learned a little bit more where to find the resources".*

It is seen that videos with a long duration is not effective, placing short films between video, graphics and questions and emphasizing important points. Videos can be updated and reused when it is necessary. It is observed that videos are watched large scale in lecture time, and absolutely watched during exam period. Student who wants to be active in the class comes to the class by watching video and the teacher can follow from the system who is watching the video or not. A student as follow expresses this situation: *"We watch video on blackboard. The teacher can see everything in video. For example, we stopped in which second, did we watch or not. For example, you can say that you haven't watched videos".*

In the flipped learning process, it is seen that various programs are used for video shooting, for material preparation, online communication with students and sharing materials. The most commonly used learning platform is "blackboard" and videos are usually shot by using the "Camtasia" program. In the learning process, apart from videos it is seen that materials such as online textbooks, source books, articles, newspaper news, etc are used.

Learning Process

The learning process is summarized in Table 6:

Table 6. Learning Process

Pre-Lesson Process	What Student Has Done	Understanding the content by watching video
		Giving answers to the questions related to the video
		Taking note
		Making question
		Doing exercises
		Examining case studies
		Reinforcing from different sources
		Developing material
		Cooperating with friends
		Asking to the teacher by massage what students do not understand
	What Teacher Has Done	Making lesson plan
		Making research to prepare video content
		Preparing video, presentation, clip
		Giving feedback to questions
		Checking if videos are being watched or not
		Setting levels of group
		Making events
		Informing students about event
		Preparing material
		Following the projects

		Giving students homework
Lesson Process	What Student Has Done	Students who came to the class without watching video are watching in the class
		Summarizing the topic to friends who came without watching videos
		Answering the video questions
		Explaining lessons to each other
		Asking question to the teacher about the topic
		Making activities of solving problem
		Making group work
		Making creative projects
		Doing activities for the application stage
		Participating in the group discussions
		Making presentation
		Preparing poster
		Preparing dialogue
		Making policy
		Filling the space by listening music
		Reading the tracks
		Doing mind maps
		Presenting products and exhibiting in the class
	What Teacher Has Done	Diversifying the learning environment with different method of techniques
		Asking questions and directing students
		Making observation
		Guiding students
		Asking questions to know who has watched the video or not
		Summarizing the topic for students who has not watcher the video
		Explaining unseen parts of the topic
		Collecting the summarized topic
After-Lesson Process	What Student Has Done	Doing homework related to the topic
		Doing nit end tests
		Reinforcing what they have learned by doing homework

Bringing homework in assignment type

In Table 6, it is seen that in the FLM, both students and teacher have tasks to do before the class. Students are busy with managing their own learning and with activities they use in self-regulatory strategies, such as understanding content by watching video, giving answer to the questions related to the video, taking notes, making questions, doing exercises and developing material. An interview with a student expressed his views on this issue like this : *"Before the class we watch videos, take a note and those who want to do extra works are working in the book. Sometimes we solve a case like a court decision. For example , inside the video the teacher can put students to come to the class by researching things or by finding following questions etc. we go to the class by researching them."* The teacher will be busy with making lesson plan, preparing video/presentation, determining groups of level, planning activities and preparing materials.

While students are participating actively in the learning environment through activities such as discussion, solving problem, presentation and making mind map, the teacher is helping students by using different method of techniques such as diversifying learning environment, providing guidance to the students and helping students who need helps. A teaching member who was interviewed found the following statements on this topic : *"We do group work in lesson. Sometimes student doesn't know what to do alone. Group working is effective in this sense. To see if they understand or not, I want them to produce something. An article, project etc. They can work in group or alone. Something left in them. We want each student to participate in the activity and solve the problem"* Another teaching member is *: "The guidelines are very important in the lesson. You should plan well structured events so that students are not bored in class. If you do not give activity at the sufficient level, they will get bored. The worst thing is boring".* Lesson observations made at the private university also support these findings. In observation; it was seen that students made group discussions, read the texts and made the principles. It was seen that the teacher encouraged students to discuss in the group, directed them, tried to add the passive student to the group to be active, asked questions and tried to find answers, gave additional tasks to the students who had finished their task already.

In the process of after class, it is seen that students do short assignments related to the topic like unit end tests to reinforce what students have learned and to make it permanent.

Evaluation Process

The evaluation process is summarized in Table 7:

Table 7. Evaluation Process

Midterm/Final/Quizzes
Participation
Class attendance
Homework
Projects
Presentations
Online tests
End of unit tests

Unit end evaluations

In the FLM, it is seen that classical methods are generally used in the evaluation, dimension and learning process. Examinations (midterm/final/quiz) from traditional assessment techniques are the most widely used evaluation techniques. Directly with the note of whether students have watched videos or not, the attendance rate of the students who have not watches the videos is falling and the grades given under the name 'class attendance' are low. The interview with some teaching members gave the following information of how they assed students as:

- I use class attendance and I use after-class homework to appreciate more. I take homework and make student lists. I mark students who give homework.
- I do midterm exam with the classical method. Also students can get extra points if they have done what they have to do and if they have provided certain criteria. There is no separated point for watching video in my subject. I use classical methods.
- I give points for watching video. I give final and midterm notes. There are projects. Students make presentation.
- We have tests of writing, reading, speaking, listening, grammar and vocabulary. I also have class attendance, 15-20 % of students' grades are from attendance.

Discussion and Conclusion

At the end of the research, the following results were obtained.

It is seen that the FLM is a developed model in accordance with constructivist and student-based education understanding. In the FLM, the basic principles of student-based education such as learning by living, enjoying and cooperating are placed in a collaborative way. The FLM is a pedagogical approach that emphasizes on the establishment of a student-based learning environment and the use of educational technologies and collaborative learning that focuses on student participation (McCallum et al., 2015; Reyna, 2015; Westermann, 2014). Beaten, Struyven and Dochy (2013) emphasizes the concept of structuring information when defining student-centered/based education and student-centered/based education is described into three features: Ensuring active participation of students in structuring information on their own; Guiding students with question or problems during the learning process and facilitating learnings; Practical situations of the teacher and using original applications for complex educational problems. Paris and Combs (2000), student centered classes; have defined as the students are excited to learn, reflect their energy to the environment and actively participate in the learning process.

It is seen that in the learning processes, using the strategies of active learning and full learning are emphasized. The FLM which forces educators to add diversity in classroom activities and to increase the creativity of students are also allows students to develop their individual learning skills. Brown and King (2000) also stated that in student-centered education, students share their ideas with each other through group work in which cooperative learning activities take place and they try to provide reflective thinking implementations. Eisenhut and Taylor (2015) describes as; the environment in which the FLM is applied are in the intensity of cooperative learning activities as well as highly flexible learning environments where free learning is also possible.

It is seen that the FLM is a model that allows students in their learning without trapping between school walls. Turan and Göktaş (2015) also described as a model that allows students independently from time and place in accordance with the individual space of the students.

It is seen that in the FLM, students come to the class by learning the basic concepts and main concepts before the lesson, as the sense of learning as trigged and in awareness of the lack of learning. In addition, students complete their preparations in accordance with the speeds without any time and space constraints before the class. Wallace et al. (2014) and Westermann (2014) state that the required problem solving, discussion etc to solve more difficult information, the general knowledge of students is usually get from reading or watching lecture videos before the class and creating time for learning activities during the lesson. Francl (2014) also thinks that students are making more internet research on the same topic before the lesson and these surveys provide students with different explanations and different views related to the topic. Turan and Göktaş (2015) say that, with this model, students can move forward independently of their time and place with their individual speeds. Danker (2015) also states that students can stop and watch video again what they have watched before the class, they can control over the parts where they do not understand, on the section that have more information or in the place where they need more reinforcements. This is also considered as a positive impact on students' learning and academic achievement.

It isseen that in student-centered classroom environment that use multiple teaching methods and techniques, students can learn while having fun and can participate in the class actively during the lesson. Through group work, students can share their ideas and can communicate effectively each other. This model also increases the interaction of teacher and students. In the FLM, during the lesson, students are encouraged in their individual inquiries, collective efforts, social interactions, reflections and independent learning skills (Reyna, 2015), Living "real life" experiences by using active learning methods (McCallum et al., 2015) research-based and experimental learning (Egbert, Herman and Lee, 2015). With this method, students are able to perform lower level tasks (knowledge and understanding) outside of the classroom and higher form of cognitive and the chance of realizing in the classroom environment through collaborative learning activities by taking the supports of teachers (Barber, 2015; Danker, 2015; Hutchings & Quinney, 2015; Westermann, 2014). In the FLM, communication and interaction between students is increasing through group work. Demir (2009) states that through group work, students see each other as a resource of information and ideas, not for competitors. Bergmann and Sams (2012) state that this model increases the teacher-student interaction, the teacher has a chance to know the students better.

It is seen that after the class, it is possible to make up lesson for students who cannot attend the class for various reasons. In addition, it makes students easier in preparing for their exams and increasing their successes. With this model, while students gain positive attitudes in learning, the teacher also enjoys from teaching and job satisfaction. Also in this model, the teacher wins motivation to improve him/herself and in following the technology. Roehl, Reddy and Shannon (2013) state that with this method, students who cannot attend the class due to various reasons such as illness would be prevented from breaking down from the process, in the same way, with the absence of the teacher, students can continue in their education with specific materials, so that lessons can be done as planned without any delays.

Gross, Hoffman and Burke (2015) found that in the FLM, with the research, students found the lessons are more interesting and their class attendances and lesson satisfactions are also increased. Clark (2015) also showed that the FLM increases the interest and involvement of students in the class. Gençer (2015) also states that this model has great benefit in ; improving the teacher him/herself, using technology effectively and making education more permanent.

It is seen that the FLM has a number of negative features in the pre-lesson and during the lesson process. Teacher's preparation of material and lesson plan is taking time and difficult; pre-lesson workloads are increasing. Turan and Göktaş (2015) states that preparing the necessary materials and taking video brings an extra workload to the teachers. Francl (2014) also states that in this model, some students complained about the increasing workload.

It is seen that the negative features of FLM that affect students are: this model is so depended on technology, students having too much learning things before the lesson and students cannot get the instant feedback. Gençer (2015) states that students who do not have an individual learning habit when they learn the planned lesson, they cannot reach the point and they cannot ask questions to the teacher and this affect the quality of teaching. Turan and Göktaş (2015) points out that the most important disadvantage of the FLM is that students come to the class without watching videos and preparation.

It is seen that during the class, the most basic problem experienced in FLM is students coming to the class without preparing or watching videos and it will make student having difficult in lesson and participation in the events. Roehl, Reddy and Shannon (2013) think that the success of this model is based on computer and internet access outside of the classroom and it could be a difficult model for financially disadvantaged students and teachers. Gençer (2015) also realized the difficulties experienced by the family and teacher that students are spending most of their time by using computer.

It is seen that difficulties in managing the duration of lesson are also counted as negatives of this method. It is also thought that this model can be applied effectively in crowded classrooms. Jingxiu and Jianguo (2016) point out that crowded classrooms at schools due to the large population in China, make it difficult to apply the FLM. Kurt (2017) also states that in the FLM, there is not much time for each student to be participate in discussions and activities in crowded classrooms.

It is seen that the teacher has a lot of workload in planning process. Plans are made on annual, weekly and daily. The teacher prepares videos, updates and installs in the system at the beginning of the year. The teacher makes daily plans, updates and plans tasks for students before each lesson.Wallace et al. (2014) suggest that a rigorous planning process is required for a class to be organized in accordance with the FLM. Reyna (2015) also states that one of the main limitations of this model is making plan carefully and preparation and this preparation process can take time and exhausting for the teacher.

It seen that the most frequently used material in flipped learning mode is video. Teachers can use ready-made videos or can make video themselves. It is seen that the content is too long while making video is not effective, short films, graphics and questions are placed between videos and important notes are highlighted. Videos can be updated and used again when necessary. It is seen that videos were watched by 60% of the lecture time and videos were absolutely watched during the exam times. Students who wants to be active in class comes to the class by watching video. Westermann (2014) emphasizes that a wide range of materials

such as diaries, journal reports, photographs, magazines as well as video technology can be used in the learning process. Gençer (2015) states that in FLM, the use of computer-aided educational materials are changing day by day usually with the developing information and communication technology, in this model while teachers are presenting knowledge to the students, the teacher points the requirements of using dynamic diagrams, online maps and guides enriched presentations with visual videos that are not too long and have high sound quality from different technologies.

It seen that the most used learning platform in the FLM is "blackboard" and videos are usually shot by using "Camtasia" programs. In the learning process, expect videos, online textbooks, source books, articles, newspaper news, etc are also used. Demiralay (2014) states that the rapid and continuous change in both software and hardware technologies makes it difficult to define this model in terms of a standard tool or software technology. Demiralay (2014) states that the use of various platforms and social network is recommended for learning activities to be realized and the trend for mobile devices is increased as access tools to these technologies and suggests that the use of references as a supporting material to learn before the class. Reyna (2015) thinks that online activities such as online exams, discussion forum, blogs, wiki or reflective magazines also help students in their learnings.

It is seen that in the FLM, students are busy with activities that they manage their own learning and self-regulation strategies such as understanding the content by watching video before lesson, answering the questions related to the video, taking notes, making question, doing exercises, and developing material. Self-study is defined as the individual ability to understand and control learning environment (Arslan & Gelişli, 2015) self study is the learning process in which students organize their cognitions and behaviors actively. Students who are able to do self study use certain strategies to reach their goals with their own efforts (Pintrich, 2000). Researches provide important benefits for improving planning and organizing skills, improving conceptual reasoning and for peer learning that increase quantitative problem solving. In this process, learning environments should be created for students to make their own plans, to give feedback and to improve themselves. Ishak et al. (2020) says that the use of asynchronous preclass online videos in the flip-class setting had successfully promoted students' intrinsic needs based on self-determination theory perspectives, namely: perceived competence, relatedness, and autonomy. In this context, in the FLM, it can be said that pre-lesson process students have developed their self-regulation skills.

It is seen that the teacher is busy with activities such as making a lesson plan, preparing a video/presentation, planning activities and preparing materials. Bergmann and Sams (2012) state that the role of the teacher in the class changes dramatically with this model during the lesson, the teacher is now out of being a person who offers information directly to the student and has taken a leading role. The teacher is in the class to help students in their learning, not for transferring information to the students.

It is seen that students are participating in the learning environment with activities such as discussions, solving problem, presentation and making mind map, the teacher is helping students in diversifying learning environment, guiding the students and helping students who need help by using different method techniques. Abeysekera and Dawson (2015) state that in the FLM, students usually perform solving problems in small groups by making peer teaching.

It is seen that in the process after class, it is seen that students are making short assignments related to the unit end test to reinforce what students have learned and to make it permanent. Reyna(2015) states that in this model after the lesson, students should be busy with high level of thinking works by the way of videos, presentation etc. For this model to be able to work well, there must be a clear link between pre-lesson process, classroom environment process and after lesson process, and if there is not an effective link between these three process, participation of students in the process cannot be achieved and this model cannot be successful.

It is seen that classical methods are generally used in the evaluation of the learning process in the surveyed schools. Examinations (midterm, final, quiz) which are from the traditional assessment techniques, are the most widely used evaluation techniques. Together with the grade of students who watch video or not, the attendance rate of the students who do not watch video is decreasing and the grades given under the name of "class attendance" are low. The situation is thought to be incompatible with the general philosophy of the FLM. Bergmann and Sams (2012) state that it is not appropriate to evaluate all of the students in a single dimension and it is necessary to use more than one evaluation method. For this purpose, unit end evaluation examinations, oral discussions, presentations made by students, short videos prepared by the students, students' writings related to the topic and other methods developed by the students can be used. However Gençer (2015) found that how the FLM is applied in the Turkish education system and student evaluations are being done with the traditional model, the evaluations are carried out three times, twice during the semester and one in the final exam according to the traditional method, and the score of participating class activities is also influenced by the students' grades.

Based on the research results, the following suggestions have been developed:

- The integration of this model into our education system should be ensured and its uses should be widespread since it is believed that students have positive influences on their learning, they have increased their learning motivations and contributed to the job developments of the teachers.
- It is considered that the required technological tools and equipment to use effectively in this model can be provided with the scope of the FATİH Project and EBA can also be used as a learning platform. Thus, the use of auxiliary documents that are shared in EBA will also be widespread.
- Teachers must be encouraged and supported on the use of this model. For this purpose, seminars and workplace should be organized to improve the teachers' skills.
- To reduce the workload that will increase with the reasons such as: the teachers guide to the students during their practice of this model, help in solving problems and in taking video, coordinatorships can be established to support technical and technology integration on a school, district, province basis.
- The use of this model makes it easier in using teacher training programs in the universities and for prospective teachers to adopt this model to use in their own teaching in the future.
- In the evaluation dimension of learning process, the traditional evaluation methods as well as process-oriented evaluation methods are also used.

- Researchers should make researches by using the FLM in their educational environments and it is necessary to develop relevant solution proposals of the disadvantaged situations that this model seems to have.

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