



META-THEMATIC ANALYSIS OF FLIPPED CLASSROOM APPLICATIONS

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Abstract:

The aim of this study is to determine the effectiveness of the flipped classroom, which is one of the activities and student-centered models, on the cognitive, affective, and social dimensions of students by making a meta-thematic analysis of qualitative studies. In the screening carried out by considering these criteria, 683 studies were reached, and 71 studies were analyzed according to the content analysis technique due to various eliminations. It is found that the flipped classroom model increases academic success by facilitating effective learning; it has been concluded that it increases the learning motivation and reduces the stress of not learning by encouraging them to engage in learning processes.

Keywords: flipped classroom, meta-thematic analysis, flipped learning

1. Introduction

Technological developments in the current century have brought changes and developments to all areas of life, as well as had an impact on the process of learning and teaching. Given the opportunities offered by the age, traditional educational approaches are inadequate to meet the needs of digital natives (Prensky, 2001), who have integrated their lives with technology. Prensky (2001) stated that the processes of acquiring and processing information of digital natives whose lives are integrated with technology are different compared to previous generations and that the traditional education system is not suitable for technological natives. For this purpose, the integration of technology into educational models that will make the learning process effective and permanent has become inevitable (Hayırsever & Orhan, 2018). One of the models used in this context, classroom flip, is an innovative student-centered model developed by enriching educational technologies in order to spend time in the classroom effectively and

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efficiently (Aydın & Demirer, 2017). In this new orientation, the teacher-centered lecture at the school is done by the student at home individually, and the activities given as homework are carried out in the school (Bergman & Sams, 2012). The flipped class model allows the student to take responsibility for his or her own learning by centering and mobilizing the student.

The flipped classroom model first emerged in 2006 when teachers Bergmann and Sams delivered screen videos of course contents to their students to enable students to take basic lessons and work at home (Yoshida, 2016). Bergmann and Sams (2012) defined this model as accessing the content that students need to acquire through videos and out-of-class platforms and focusing more on constructive activities within the classroom. Bergmann and Sams (2012), who emphasized the effective use of time within the classroom by giving the content to be presented in the course in advance to the students, mentioned that the time used in the class with the flipped class was restructured, and the teacher's in-class role changed significantly.

Bishop and Verleger (2013) have stated and rejected this model as inadequate to identify and implement the flipped class model of commissioning non-classroom learners to read and having discussions within the classroom, which does not use videos as out-of-class activities. According to Bishop and Verleger (2013), the flipped classroom is classified as a two-part training technique, with student-centered interactive group learning activities in the classroom and direct computer-based individual teaching centered on teachers outside the classroom.

The flipped classroom model aims to learn more persistently and meaningfully by combining in-class activities with online learning methods and combining the positive aspects of both. In this model, learners are required to learn the course content outside of class times. Students come to the class knowing the subject and repeat and reinforce the knowledge they have already learned through various classroom processes (Çakmak & Karataş, 2020). Thus, they have the chance to learn actively and meaningfully by devoting their time in the classroom to collaborative learning, problem-solving, project-based work, discussion (FLP, 2014; Demirer & Aydın, 2017; Talan & Batdı, 2020). In this context, we can say that the flipped classroom model has transferred the responsibility of learning from teacher to student by making the student more active in the learning-teaching process.

There are four essential elements of flipped learning, and it is stated that these four elements must be taken into account to be fully understood and used by teachers (FLP, 2014). The first letters of the specified elements constitute the English word "FLIP" of this model. The first element is to physically rearrange learning spaces with a flexible environment, ensuring flexibility as time and space. The second element, learning culture, is the meaningful participation of students in their learning and evaluation processes through rich learning activities in classroom time. In this direction, in the flipped classroom model, the traditional teacher-centered approach, in which the teacher is the source of the knowledge, is voluntarily transitioned to the student-centered approach. The third element of the model, Intentional Content, is for educators to determine the materials they need to use throughout the course and the learning

strategies that will actively involve students in the process, following the students' levels and content, and using in-class time efficiently at the highest level. Finally, the Professional Educator element notes that the responsibilities of educators using this model are more significant than those who use the traditional approach. Teachers constantly observe students, give feedback, and evaluate their work during the course. Educators communicate with each other to improve and improve the learning-teaching process (FLP, 2014). It is seen that educators need to carry out their courses considering these four essential elements to use the flipped class model efficiently at the highest level. Implementing the flipped learning model in the learning-teaching process has several positive aspects for educators and learners. One of the essential advantages of this model is that it creates more teacher-student interaction opportunities in in-class time (Fulton, 2012). Instead of comprehending the new topic, students who study and come to the subject use the in-class time to reinforce the subject with more practice and rich activities and create meaningful learning (Roehl, Reddy & Shannon, 2013; Tucker, 2012; Durak, 2017). The model also supports teamwork using various teaching techniques (Milman, 2012; Strayer, 2012) and contributes to the development of high-level thinking skills such as questioning, critical approach, problem-solving (Gaughan, 2014; Kim, Kim, Khera & Getman, 2014). Students who take responsibility for their learning can access the course videos whenever and wherever they want and progress at their own pace (Kaya, 2006; Stone, 2012). Features commonly highlighted in this model, which is a component of blended learning; it can be said that the learning process should be richer and more flexible with the technological opportunities offered, to make the activities more effective and efficient, to support collaborative learning, with the increase of the time allocated to in-class work.

In addition to the positive effects of the flipped learning model on the educational process, there are some limitations and downsides. In this model, students must prepare and come to the class to be active in the classroom. Accordingly, educators must carefully prepare their videos to present the content so that the students will be ready for the lesson (Ozdamli & Aşiksoy, 2016). Contrary to the idea that teachers' workload decreases (Filiz & Kurt, 2015), instructors spend a long-time developing content that learners will use outside the classroom and finding suitable materials (FLP, 2014; Herreid & Schiller, 2013). Technological problems that may occur in the learning process or the lack of technological equipment such as tablets, computers, or smartphones are among the disadvantages of the model (Milman, 2012; Kordyban & Kinash, 2013). One of the problem situations mentioned about the model in literature is the impossible situation of whether the learners watched the video (Demirer & Aydın, 2017). It can be said that it takes more time to prepare the contents to be used outside and during the course and to determine the activities, technological glitches, or lack of technological equipment, teachers and students cannot be sure that they are fulfilling their responsibilities in extracurricular time.

1.1 Purpose and Importance of Research

When the field is examined, the flipped class model in national and international studies increases the academic achievements of learners in many fields such as foreign languages, mathematics, social sciences, health sciences, and science (AlJaser, 2017; Alsancak Sırakaya & Özdemir, 2018; Aydın, 2016; Çakır & Yaman, 2018; Elian & Hamaidi, 2018; Hung, 2015; Kara & Gürpınar, 2018; Karabatak & Polat, 2019; Morgan, Nayci, Tireless, & Demirhan İşcan, 2017; Söğüt, 2019; Yestrebksy, 2015), attitudes towards the course (Gökdemir & Gazel, 2019; Kozikoğlu & Camuşcu, 2019) and their motivations (Alsancak Sırakaya, 2018; Aydın, 2016; Karabatak & Polat, 2019; Olakanmi, 2017; Şenel & Kahramanoğlu, 2018) in a positive way. In addition to studies on academic success, attitude, and motivation, it is seen that the number of studies that systematically reveal the research in this field and explain the subject trends is limited (O'Flaherty & Phillips, 2015; Aydın & Demirer, 2017; Özbay & Sarıca, 2019; Talan & Batdı, 2020; Yıldız, Sarsar & Çobanoğlu, 2017). Of these, 64 studies conducted between 2013 and 2019 were examined in Talan and Batdı's (2020) study.

One of the activities and student-centered models, the flipped education model, contributes significantly to the students' cognitive, sensory, and social dimensions. In this context, it is aimed to investigate the effectiveness of qualitatively conducted national and international studies on the flipped class model within the framework of participatory opinions. It was observed that there was no meta-thematic analysis of the flipped class model in the literature, and it was decided to carry out the current research to contribute to this field. From this point of view, in the context of meta thematic analysis, the flipped classes.

- 1) What is the effect on the cognitive dimension?
- 2) What is the effect on the sensory dimension?
- 3) What is the effect on the social dimension?
- 4) What are the teacher descriptions that experience it?
- 5) What are the negative repercussions on students? Questions were sought.

2. Method

In this study, studies involving qualitative participant views will help reveal flipped classroom practices' effectiveness. Qualitative research ensures the completion of gaps that arise by investigating aspects that quantitative examinations cannot reach (Cohen et al., 2017). In this context, qualitative research has been examined within the framework of meta-thematic analysis. There is an understanding of reassessment of the themes and codes obtained after analyzing a specific subject from qualitative research in meta-thematic analysis. The researcher reinterprets and reconstitutes the themes and codes he created while carrying out this process based on the data from the studies scanned in meta-thematic analysis (Batdı, 2019).

This study was conducted to demonstrate the effectiveness of flipped class applications through meta-thematic analysis. For this purpose, qualitatively patterned studies on flipped classroom applications were examined from the Higher Education

Institution (YÖK), Google Scholar, Web of Science, ProQuest, Taylor and Francis, ERIC, EBSCOhost, and ScienceDirect databases. Keywords such as “Flipped class, flipped class applications, flipped classroom, flipped classroom, classroom flip, flipped class” were used during the scans. The criteria for inclusion in the meta-thematic analysis were determined to be between 2010-2021, to be conducted in a qualitative way, to be included in the specified databases, to examine the effect of the flipped learning model on the learning process, and to be published in English and Turkish languages. In the screening carried out considering these criteria, 71 studies were analyzed according to content analysis technique due to various screenings that reached 683 studies.

Content analysis involves long textual sections being sorted smaller and more manageable through categories (Maruna, 2010) or making correct repeatable and valid inferences to linking from data; verbal discourses, written documents, or visual presentations are the research technique that takes the source (Krippendorff, 1989). In addition, content analysis; to create a data system by collecting similar units under common themes and codes and to present this data by interpreting it with the help of the resulting layout. This encoding is based on specific rules and is a systematic technique in which a text is summarized in smaller categories. Content analysis infers for impartial and systematic recognition of specific content characteristics, data is disclosed, relationships are determined (Yıldırım & Şimşek, 2006; Büyüköztürk, et al., 2019).

In the study, when data is taken from the databases, the participant is in the process of editing their opinions, thesis numbers, and opinions for thesis (e.g., 423423-p.71), “PQ” for ProQuest database, “GS” for Google Scholar, “TF” for EBSCOhost database, “ER” for Eric database and number and page number for how many articles (e.g., TF5-s.429). In addition, samples of participant opinions were given fully and accurately for the codes formed during content analysis in the study. After the studies were obtained, content analysis was performed, and codes and themes were obtained. At this stage, some codes and themes are obtained in the meta-thematic dimension of the aching. It is stated that it is carried out in three different processes: open, axial, and selective (theoretical) coding (Merriam & Tisdell, 2015). In this study, line-by-line, sentence-by-sentence, and even word-by-word analyses were performed with clear coding of the opinions cited in the publications (Corbin & Strauss, 2008). In the second step, the qualitative data obtained were collected in groups to create the relevant theme of those close to each other. In the last step, complicated codes are known as selective encoding, in which comments/expressions are detailed (Scott, 2004) and consistent integrity is revealed, are determined. Those who contain distinct differences are eliminated, and the codes are finalized. Cohen Kapa compliance values related to related themes have been calculated and. A good level of harmony was found in the form of 86. Thus, validity and reliability were tried to be ensured.

The process, which specifies the inclusion of those who meet the eligibility criteria from the scanned studies and excludes those who are not eligible for this research, is described in the PRISMA flow diagram in Figure 1 step by step.

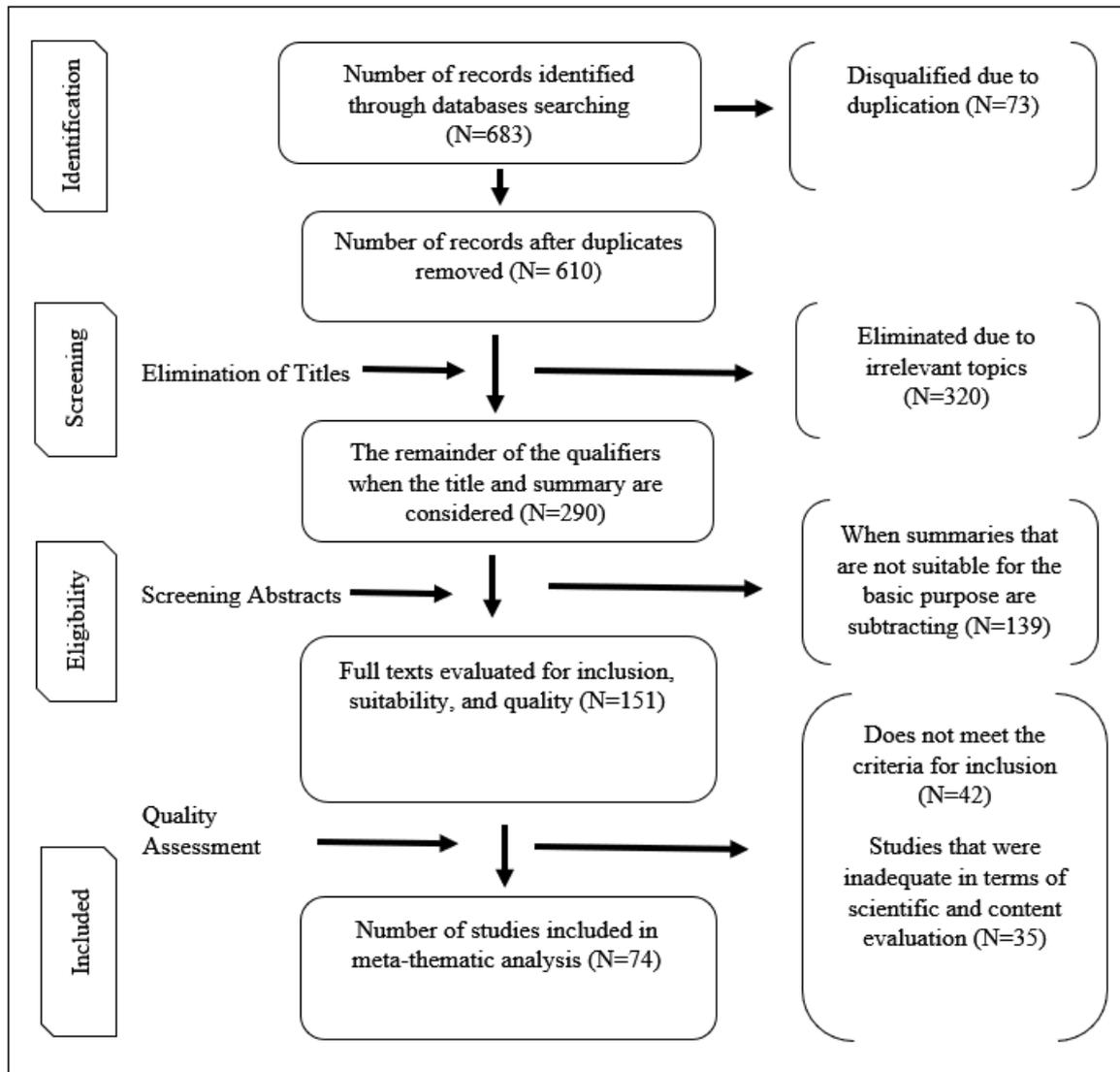


Figure 1: Flow Diagram of Studies Included in Meta-Thematic Analysis

Table 1: Number of elimination process of studies reached from databases

Database	Keywords: Flipped Classroom, Classroom Flip, Flipped Class, Flipped Class, Flipped learning		
	Total Result	Result After Entering Search Criteria	Number of Research Deemed Eligible
1. Taylor & Francis	208	93	10
2. ERIC	500	93	4
3. EBSCOhost	798	213	4
4. Science Direct	125	8	0
5. YÖK	109	77	40
6. Google Scholar	1247	101	7
7. Web of Science	27	6	0
8. ProQuest	381	92	6

As a result of the scans, 683 qualitative studies were reached. Seventy-four of these studies were removed due to duplication. They were achieving the same studies from

different databases required this elimination. Of the remaining 609 studies, 320 were eliminated because they had irrelevant subjects despite being obtained in general screening. In the following evaluation, summaries of the studies were examined, and 139 of them were eliminated, and 150 studies remained. The full texts of these 150 studies were evaluated in terms of inclusion criteria, conformity, and quality, and as a result, 79 more studies were eliminated, and 71 studies remained. Therefore, 71 studies were analyzed because of detailed and systematic evaluations for meta-thematic analysis. All these studies are practical applications. Below is the statistical information of the studies taken from the databases in Table 1.

In Table 1 above, the indexes and numbers of the studies included in the meta-thematic analysis are indicated. The specified keywords and the databases mentioned were scanned with precision and the studies reached were meticulously noted. After the screenings were made following the criteria, studies included in the meta-thematic analysis emerged.

3. Results

As a result of the meta-thematic analysis of the research, the codes obtained from the related studies were collected under specific themes. At this point, the effect of the flipped class model on cognitive, sensory, and social dimensions, teachers' definitions of the flipped classroom, and themes for negative thoughts was created. Themes, codes, and excerpts supporting the codes are presented separately in detail in this section. Detailed statistical information such as year intervals of the studies subjected to content analysis in the context of meta-thematic analysis, the course where the application is performed, level of teaching, sample size, publication type, and application time are as follows in Table 1.

Table 2: Statistical Information for Analysed Studies

Variable	F	%	Variable	F	%
Level Of Instruction			Year		
Primary School	2	2.8	2010-2012	0	0
Secondary School	16	22.5	2013-2015	7	9.8
Lise	10	14.2	2016-2018	37	52.2
University	43	60.5	2019-2020	27	38
Application Time			Lesson		
1-4 Weeks	8	11.2	Science	9	12.6
5-9 Weeks	18	25.3	Social Sciences	5	7
10-14 Dawn	11	15.4	Foreign Language	26	36.6
15-19 Weeks	21	29.5	Mathematics	11	15.5
20 and up	13	18.3	Computer	8	11.2
			Other	12	17
Publication Type			Sample Size		
Article	27	38.2	1-49	24	33.8
Ph.D. Thesis	23	32.3	50 To 99	36	50.7
Master's thesis	21	29.5	100 and above	11	15.5

When Table 2 is examined, it is seen that 43 of the studies included in the meta-thematic analysis were carried out at the level of university (60%), 16 at secondary school (22%), ten at high school (14%), and two at elementary school (2%). When we look at the year intervals, the most studies were between 2016 and 2018 with 37 (52%). 27 (38%) studies follow this in 2019-2020. In recent years, it can be said that the frequency of learning with flipped classes has increased. When looking at the periods in which the studies included in the analysis were applied, the studies carried out between 15-19 weeks (29%) and 5-9 weeks (25%) were more than other weeks (1-4%), 10-14%, 20% and above (18%). Foreign language is the most preferred course, with 26 studies (36%) when the courses subject to studies are examined. It is followed by mathematics with 11 studies (15%), science with nine studies (12%), computer with eight studies (11%), and social sciences with five studies (7%). Twelve studies (17%) belong to other courses that are not mentioned. To refer to the type of studies included in the meta-analysis, we see that 27 articles (38%), 23 doctoral theses (32%), 21 high undergraduate (29%) thesis were examined. Finally, when sample sizes are considered, there are 36 studies (50%) with sample sizes of 50-99, 24 studies with sample sizes from 1 to 49 (33%), and 11 studies (15%) with a sampling of 100 or more.

3.1 Impact of the flipped class model on the cognitive dimension

The following table shows the contribution of the flipped class model to the cognitive dimension in the codes. Excerpts from the analyzed studies support the codes obtained.

Table 3: Impact of Flipped Class Model on Cognitive Dimension

Theme	Codes	Citation
Effect on the cognitive dimension	Making learning easier	423423-p.71; <i>"The flipped learning environment is superior because it makes learning easier."</i>
	Being an efficient method	TF5-s.429 <i>"If only the instructor teaches us, maybe we can only get a basic understanding of the concepts. However, we confirmed what we learned by participating in such events, which further clarified the concepts."</i>
	Ensuring lasting learning	TF8-s.215; <i>"It is great to watch videos at home or read presentations before you come to class, then practice in class, and I think it's more permanent."</i>
	Giving it a chance again	GS2-s.2493; <i>"even if I forgot what was said in the videos, I could open the videos and watch them again. I was able to stop and open it whenever I wanted."</i>
	Enabling the consolidation of learning	GS1-s.203; <i>"I am happy that the subjects are better reinforced with the activities made. Because in this way, we characterized the concepts and made it easier for us to keep them in mind."</i>
	Being an effective method	514604-s.182 <i>"In fact, I look at the model positively in general and think it has an impact on learning."</i>
	Active participation in the course	GS6-s.114; <i>"Almost all students were active in the course instead of being passive recipients."</i>
	To be suitable for individual learning speed	429617-p.61; <i>"Some friends have little capacity, some understand at once, others understand three times. Everyone watches the video in their way and repeats it."</i>

Making it a living-learning	394794-p.76 <i>"As I said, we see it not as a lesson in class, but actually by living. We are experimenting. I would not come prepared for anything. It is the first time I have been prepared. So, I came here with one thing."</i>
Diversifying learning paths	419422-p.95; <i>"He teaches with video, he tells the teacher on top of him, he tests him. And you look up places online that you say you do not understand in the video, and you talk to friends on the forum, and you have to learn because you learn in so many ways."</i>
Teaching effective time management	541682-s.143 <i>"Thanks to the application, we have saved time. Thanks to the time we won, we had competitions, fun activities, and listening to school."</i>
Increasing academic achievement	478696-p.66; <i>"I understand the lessons better, I understand the lesson more easily, my grades have improved even more thanks to the videos. The teacher is getting better understood. Then you get better grades on exams. It's a success."</i>
Ensuring regular study	445646-p.51 <i>"I created a class environment and took notes on my own, so it was so disciplined for me that I had to plan and work regularly."</i>
Discovering the technique of individual work	EB4-s.150 <i>"Sometimes I couldn't understand the meanings by reading alone. However, educational videos have helped me write stories, practice dialogue, and understand the general meaning that I can apply to my daily conversations."</i>
Diversifying learning environments	429617-p.78; <i>"Our education was carried out positively in in-class and out-of-class learning environments. We perform learning in a comfortable environment at home."</i>
Getting ready for class speeds up learning	ER3-s.134; <i>"Coming to class by doing preliminary work on the subject makes me more productive and better understand the subject."</i>
Providing deep learning	502967- p.68; <i>"We learn our subject more deeply and carefully in the flipped class."</i>
Being a student-centered method	542271-s.86 <i>"Studying at home from EBA and doing activities in the classroom did not seem serious. But as time went on, I found that this system was more student-centric and fun. In short, I can say that I have been successful in mathematics courses this semester, I am satisfied and enjoying myself."</i>
Increased readiness	419422-p.88; <i>"But in this model, for example, everyone comes reading because it covers the whole group. Some are looking at the video, and some are looking at the presentation from pdf (text). This raised the level of readiness in many people."</i>

Table 3 illustrates the codes obtained in the context of the effect of the flipped class method on the cognitive dimension and the excerpts for these codes. Some of these codes include; it can be stated as increasing academic success, facilitating learning, ensuring permanent learning, ensuring effective participation in the course, increasing readiness. *"I understand the lessons better, I understand them more easily, my grades have risen even more thanks to the videos. The teacher is getting better understood. Then you get better grades on exams. It's a success."* *"The flipped learning environment is superior because it makes learning easier,"* reads study 423423-p.71. *"It is great to watch videos or read presentations at home before you come to class, and then practice in class, and I think it is more permanent,"* M18-s.215 said.

“Almost all students were active in the course instead of being passive recipients,” the study, coded M19-s.114, said. 419422-s.88 coded “But for example since this model covers the whole group, everyone comes reading. Some are looking at the video, and some are looking at the presentation from pdf (text). This raised the level of readiness in many people.” As it is understood from the citations, flipped classes contribute positively to the students’ cognitive levels based on the specified codes and codes. It is seen that the flipped teaching method facilitates learning by ensuring the active participation of the student in the course and subsequently increases academic success. This learning and success are more permanent than traditional teaching.

3.2 Impact of the flipped class model on sensory dimension

The following table describes the effect of the flipped class model on the sensory dimension with the codes. Excerpts from the analyzed studies support the codes obtained.

Table 4: Contribution of Flipped Class Model to Sensory Dimension

	Codes	Citation
Effect on sensory dimension	Increase learning motivation	TF10-p.12; “My motivation has gone from higher than usual to a very high level.”
	Self-confidence	PQ4-s.120; “I grew more confident when I was talking in class. However, I could not talk about it last year.”
	Nice to get ready for class by watching a video at home	452188-p.101; “Working at home watching videos adds a lot to our learning.”
	Enjoyment of in-class activities	519317-p.138; “It was much fun. I enjoyed the events. We have got more on our minds.”
	Making you want to be ready for class	642662-s.159; “I wanted to come to class prepared, and I didn’t want to be behind the class. And of course, I wanted to pass the course successfully.”
	How it feels good to help friends learn	PQ5-s.141; “I feel good when I help others, which means I learn better”
	Being a fun method	GS1-s.203; “The lessons are more fun, efficient and have given us many technical methods”
	Increased importance given to the course	541682-p.149; “My interest in English has increased. And that means a lot to me. I could not recognize myself in English class. I do not know how time goes. That’s very important.”
	Reducing the stress of not learning	429768-p.67; “I was very comfortable psychologically. Because we watched a video, we came to class prepared. It is good to do homework at school, face to face with the teacher and be in dialogue. There was no stress. He didn’t have the stress of not understanding the subject.”
	Comfortable learning environment	TF2-s.18; “I feel safe and comfortable reading and responding to assignments given as I can review materials without any limitations and at any time and anywhere.”
Feeling a sense of responsibility	EB2-s153; “I think it makes you aware of your sense of responsibility.”	

Curiously, it makes you want to wait for the next lesson.	606454-s.150; <i>"I was so excited when I watched it at home and came to school. I was wondering what event we were going to do and what kind of event it was going to be, and that's how I'm going to change my math life."</i>
Giving freedom to the student	ER2-s.217; <i>"I watched classes whenever I wanted - sometimes when I was traveling on the bus, sometimes playing games or eating."</i>
Encouraging you to enter learning processes	429617-p.70; <i>"The model encourages us to attend the class. It is boosted our confidence. Because we always get a say and talk in class. This encourages us in other courses."</i>
It's an interesting method.	TF8-s.215; <i>"I have never studied in a way like this before. It was exciting, I liked it."</i>
Request to apply in other courses	542271-s.89; <i>"Ok, this system is beautiful student-centered, fun, fun. I am saying we are used to this system, and the next thing I know, the old order is going on, two systems that are the opposite of each other. After I left math with this system, it was hard for me to take physics with the old system. I think it should be applied in every lesson."</i>
Request to continue the method	589570-p.48; <i>"So, I think that the traditional method of education is now failing, that flipped education is at least worth trying, it should be tried. Because I think it has been very productive for numerical courses."</i>

Table 4 illustrates the codes obtained in the context of the effect of the flipped class method on the sensory dimension and the excerpts for these codes. Some of these codes include can be stated as increasing the motivation to learn, giving confidence, encouraging to enter the learning process, is a fun method, feeling a sense of responsibility. For these codes, *"My motivation has increased to a much higher level than usual,"* M29-s.120 coded work from the M33-s.12 coded study. *"My confidence increased when I spoke in class. However, I could not talk about it last year."* *"The model encourages us to participate in the course. It has boosted our confidence. Because we always get a say and talk in class. Which encourages us in other classes. "The lessons are more fun, efficient, and have given us many technical methods."* *"I think it makes you aware of your sense of responsibility"* can be taken as a reference sentence from the M23-s153 study. As can be seen from the codes, flipped classroom applications are powerful in appealing to the sensory dimensions of the students. Students in this technique have determined that students feel significantly motivated by sensory concepts such as motivation, self-confidence, responsibility, and enjoyment.

3.3 Impact of the flipped class model on the social dimension

The following table shows the effect of the flipped class model on the social dimension with the codes. Excerpts from the analyzed studies support the codes obtained.

Table 5: Contribution of Flipped Class Model to Social Dimension

	Codes	Citation
Impact on Social Dimension	Increasing communication between students for the classroom	529371-p.295; <i>"I think the most important benefit is that we communicate more with our friends in class. Normally the teacher teaches, we listen. It is forbidden to talk to anyone next to us. But he's free to do it."</i>
	Increasing teacher-student communication in the classroom	ER1-s.612; <i>"Yes, I am very pleased. Because that is how I was briefed before I came to class, so, I can ask the teacher more questions."</i>
	Contributing to learning by helping students	GS3- p.142; <i>"Helping friends and I make it easier and more difficult for us to learn."</i>
	Creating a learning-oriented classroom atmosphere	GS7-s.301; <i>"No students are exhibiting unwanted behavior. Everyone is focused on learning."</i>
	Group work increases in-class learning interaction	TF8-s.218; <i>"Group work. In this way, we understand some points of the subject or activity better"</i> .
	Desire to be part of a group in in-class activities	642662-p.169 <i>"I love group work. Normally you cannot look left and right in class, so there is no noise, no teacher gets angry. I became a group with my favorite friends, and we had fun together, solved questions, and made applications."</i>
	Gaining collaborative learning qualifications	642662-p.166; <i>"I'm afraid to ask my friends on my right and left the questions that I can't do in normal time because the teacher gets angry, in case there's going to be noise. But the opposite happened. We had a lot of free time. I could ask anyone in my group any question I wanted. My friends and I argued, we thought of solutions, we tried, we found solutions. It's much better."</i>
	Socializing	514604-p.187; <i>"With this method, the students in the class socialized with each other"</i>
	Increasing teamwork	429768-p.68; <i>"Because it's group work, I said if you don't work, my friends will go down. You say you should at least work for my other friends in the group."</i>
	Increasing the exchange of information	EB4-s.150; <i>"I learned much more from the teacher, from educational videos and through my interaction with my partner. And I am becoming more active in learning English."</i>
	Strengthening friendship ties	478696-p.63; <i>"They have become more of a friendship. I was not very friends with some of my friends, but thanks to the app, we bonded more by asking questions and discussing videos."</i>
	Creating an energetic classroom environment	515728-p.76; <i>"We were all active and energetic. I had a lot of fun and found it useful."</i>

Table 5 illustrates the codes obtained in the context of the effect of the flipped class method on the social dimension and the excerpts for these codes. Some of these codes include it can be stated as increasing teacher-student communication within the classroom, contributing to learning by helping, socializing, strengthening friendship ties, creating an energetic classroom environment. *"Yes, I am very pleased. Because that is how I was briefed before I came to class, so I can ask the teacher more questions."* *"Helping friends and I make it easier and more difficult for us to learn."* *"With this method, students in the class*

socialized with each other.” “Friendship bonds have been more numerous. I was not very friends with some of my friends, but we bonded more by asking questions and discussing videos.” “We were all active and energetic,” he said from the study, coded 515728-s.76. I had much fun and found it helpful.” From the data obtained, it is understood that the flipped learning environment is an interactive technique. Since it increases communication and interaction between teacher-student, student-student, sharing of learning, being a learning-oriented class thanks to the energetic classroom environment formed and indirectly strengthening friendship ties, this method positively affects the social dimension.

3.3 Teacher descriptions of the flipped classroom model

In the following table, codes are created based on the teacher’s perspective of the flipped class model. Excerpts from the analyzed studies support the codes obtained.

Table 6: Teacher Descriptions about the Flipped Classroom Model

	Codes	Citation
	An effective technique	515728-p.92; <i>“I found it very effective. It helps to gain individual working skills.”</i>
	Time consuming	508195-p.86; <i>“For all matters; I spent a lot of time finding the right video and activity that fits, students won’t get bored”</i>
	Feeling happy	508195-p.82; <i>“I felt very comfortable and happy in class because I was walking around the students looking at what they were doing. They were so excited to show what they were doing.”</i>
	Give feedback	508195-p.82: <i>“I circulate among students and give them feedback one-on-one or as a group. In this way, I can see common mistakes” .</i>
Teacher size	Students active	PQ3-s.188; <i>“I found the participation of students in in-class discussions more active than in the traditional class.”</i>
	Impact on class climate	PQ3-s.188; <i>“Improves students’ classroom behavior and course achievements.”</i>
	Peer learning	515728-p.92; <i>“Intending the communication, allowing students to learn from each other.”</i>
	Getting to know the student	ER4-s.301; <i>“The flipped class model allows students to better understand the issues they have difficulty understanding”</i>
	Increase in success	ER4-s.302; <i>“There has been an increase in academic achievement compared to traditional in the classroom where flipped learning is applied.”</i>
	Make learning easier	PQ2-s.89; <i>“(With this method) Teachers can do extra activities to embody the concepts that need to be learned.”</i>

Table 6 illustrates the codes obtained in the teacher’s opinion of the flipped class method and the excerpts for these codes. Some of these codes include an effective technique that makes you feel happy, and students can be indicated as active, impact class climate, and increase success. For these codes, *“I found it very effective,”* he said from the study, coded 515728-p.92. *“It helps to gain individual working skills.” “I felt very comfortable and happy in the classroom because I was walking around the students looking at what they were doing. They were so excited to show what they were doing.” “I found them more active than in the traditional class if students participated in in-class discussions,”* M26-s.188 said. *“Improving students’*

classroom behavior and course achievements,” M26-s.188 said. “There has been an increase in academic achievement than traditional in the classroom where flipped learning is applied” can be taken as a reference from the study coded M28-s.302. Teachers generally have positive thoughts about the method. Teachers who see students actively participate in learning processes and increase their success are happy. It is another essential piece of information to be considered to determine from teachers’ eyes that this method creates a positive and efficient classroom atmosphere.

3.4 Negative opinions about the flipped class model

The following table provides codes for the negative perspective that arises about the flipped class model. Excerpts from the analyzed studies support the codes obtained.

Table 7: Negative Opinions About the Flipped Class Model

	At	Citation
Negative Opinions	It takes a lot of time.	TF10-p.12; “It takes much time at school and home.”
	It is exhausting	491434-p.226; “I was getting too tired.”
	Lack of applicability to every course	429768-p.69; “May not be applied in every course.”
	How boring watching videos is	EB3-s.159; “I got bored watching videos.”
	No questions asked while watching a video	606454-s.153; “For example, I have solved the problem, but I am undecided on whether it is right or wrong.”
	The lack of internet and video players is a big problem	550404-p.88; “I also think that people who cannot afford it will not have electronic devices and therefore will fall behind when the course is processed with this method.”
	How watching videos creates pressure	372445-p.79; “The videos you send are very lovely and helpful, but I feel them as a necessity, a pressure on me. I did not want to do it because I felt like it.”
	Visual and auditory inferiority of videos	TF6-s.279; “I think videos can be recorded more professionally.”
	It is hard to get used to	GS5-s.141; “We also felt very shy when we knew we had to work in groups and share our ideas and ideas because I cannot get used to working in groups and sharing my ideas.”
	Learning depends on the video	445646-p.53; “I learned that if I don’t watch the video, I won’t be effective at class events.”

Table 7 is shown the codes obtained in the context of the effect of the flipped class method on the social dimension and the excerpts for these codes. Some of these codes include it takes a lot of time, it is tiring, there are no questions when watching videos, the lack of internet and video players is a big problem, watching videos creates pressure, and learning depends on the video. “It takes much time at school and home,” he said of the M33-s.12 code. “I was getting too tired,” he said, from the study coded 491434-s.226. “The videos you send are very nice and useful, but I feel them as a necessity, a pressure on me. I did not want to do it because I felt that way.” “For example, I solved the problem, but I am uncertain whether it is right or wrong.” “I also think that people who cannot afford it will not have electronic devices and therefore will fall behind when the course is processed with this method.” “I learned that if I

do not watch the video, I will not be effective at class activities." The harmful data obtained about the flipped learning method are small and diversified compared to the positives. Material deficiencies such as video players and the internet can be considered the main problem as the application can never be made. In addition, negative thoughts such as tiring and labor demanding have been detected.

4. Conclusion and Discussion

This qualitative approach, in which flipped class applications are examined in the context of meta thematic analysis, aims in this direction; 71 studies of an appropriate nature taken from the databases determined in this direction were analyzed with content analysis technique. As a result of the analysis, many codes, including cognitive, sensory, social dimensions, and teacher perspective angle and negative aspects, were reached.

When we look at the effect of flipped learning on the cognitive dimension, we see that it increases academic success by making learning easier effectively. In addition to this essential contribution, other codes about the method show us that this method creates a situation following the principle of learning by making students participate effectively in the course and shortens the learning time by increasing readiness. In this method, the gains gained are permanent because the students actively participate in the course and play an active role in the center of their learning process. This generally coincides with the modern age's student-centered understanding (Canbay, 2012; Demirel, 2012). Videos watched at home and pre-recorded by the teacher can be used repeatedly according to the students' learning speeds. This feature indicates that the part of the method that is spent at home allows work/monitoring until you learn following the individual learning speed. In this way, students can manage their learning at the speed they want by not adhering to each other's learning speed, which attaches importance to individuality in teaching and may not contribute positively to learning (Seidel, 2006). Both individual learning by watching videos at home and group work and activity-based courses in the classroom environment show that learning this model is diverse. The student who learns the preliminary theoretical information at home and comes to the course uses this information to effectively pass the class process, ensuring that the learning is strengthened. In order to be active in the activities held in the classroom, prior theoretical learnings must be done individually at home. This leads students to study regularly at home and watch videos. The student who has made a habit of regularly working at home and has continuously moved part of the classroom will have permanent and efficient learning by diversifying the learning environments (Li, 2012). One of the weaknesses of the traditional model is that it may be incomplete in diversifying learning environments.

When we examine the degree to which the model affects the sensory dimension, it increases the motivation to learn and encourages them to enter the learning processes, reducing the stress of not learning. The student's sense of complacency, self-sedation, and high motivation to learn, and the reduction of the anxiety of not being able to learn are essential factors that effectively affect the model's success. Learning anxiety negatively

affects learning. There are also studies where this has been detected (Kaya & Yildirim, 2014; Aydın & Zengin, 2018). With this decreasing and subsequent learning motivation increasing, a situation occurs in which students give all their attention and relevance to the course. Active involvement of the student in the process by not being passive is one of the most critical factors that keep his motivation alive (Sparrow, 2016; Vulture, 2006). Another effect of flipped learning on the sensory dimension is the self-confidence that occurs because it makes the student feel active and achieving. Confident students tend to unleash and use their potential (Soner, 2000). However, it was determined by the analysis that this method is exciting and fun for students, that they enjoy the course, that it keeps the sense of curiosity alive, that they feel freer, and that their importance to the course increases. Similar findings have emerged in different studies (Hardworking, 2016)

To mention the contribution of flipped learning method to the social dimension; In the in-class process, it was determined that the communication and interaction between the teacher and the student and the students among themselves increased according to the traditional method, which is not flipped. In this formation, it can be shown that the students are more active in the classroom, the activities are included in the leaf course, and the teacher has more time to take care of the students. Increased communication and interaction can contribute positively to the realization of learning (Boyle & Nicol, 2003; Hirschy & Wilson, 2002). Another contribution of the method is to prepare the ground for the formation of peer learning. It is seen that the students learn by asking each other questions thanks to the group studies carried out to carry out in-class activities. Thanks to group studies, students develop their ability to work collaboratively while performing peer learning. This increases teamwork and gives students the advantage of being part of the team and learning together, thus becoming a learning-oriented class. On the other hand, friendship ties are strengthened as students communicate more with each other.

When we want to know what teachers who experience this method think from the analyzed studies, it is understood from the codes obtained that teachers think of flipped classroom practices as an effective technique in summary. When we want to look at it in detail, it is stated that this method facilitates learning with its structure that activates the student in teachers' eyes and increases success. Teachers believe that because students are ready for class with their work at home, they have more time to devote to the student individually or in different areas, which allows them to get to know the student more and give more feedback. Recognizing the student in the classroom and acting according to his/her characteristics can increase the student's interest and success (Hatipoğlu & Kavas, 2016). Increasing the feedback rate allows you to learn in the right channel by preventing misinformation (Karaman, 2018). Teachers state that flipped learning contributes positively to the classroom climate and, therefore, effectively reduces unwanted behavior. The flipped model can engage students in teaching, so it helps the teacher with classroom management. This also contributes to creating and learning a pleasant class climate (Fat & Turan, 2004). Teachers are happy to see students actively engaged and configuring their learning. This sensory contribution can also affect the teacher's improved work performance (Yavuz & Karadeniz, 2009). The only harmful

code that arises in this theme and the subject matter is that the method can be time-consuming. Teachers put much effort into creating or finding activities and videos that fit student characteristics, which is seen as a waste of time.

When the harmful codes about flipped learning are considered, it is usually seen that these codes are caused by the working part of watching videos in the home process. Video viewing is dull, no questions can be asked while watching videos, lack of internet and video player prevents the application of the method, video watching creates pressure, videos are visually and auditorily poor quality, learning depends on video, problems with the part of the flipped learning model at home and the video viewing process. These are frequently seen in studies that practice flipped learning (Kardaş & Yeşilyaprak, 2015; Flick, 2019; Ramaglia, 2015). The source of these problems may be because we experience the method for the first time and the essence of the method, but the lack of financially sourced internet and electronic material can be a significant problem. In addition, the method is exhausting, takes much time, does not apply to every course, is difficult to get used to, and these opposing ideas, all other opinions about the model, are relatively small enough to be addressed in numbers and diversity.

As a result, meta-thematic analysis of 71 studies conducted at national and international levels was carried out, and it was aimed to produce inclusive, holistic, highly generalized results about the flipped learning model/method. Analysis of the cognitive, sensory, social, teacher opinion and negative dimensions of this target model has been made, and codes and themes have been extracted, followed by the flipped classroom applications as a method that activates the student, puts them at the center of learning processes and increases academic success. It is a modern method integrated with technology, saving time, diversifying the teaching environment, and being fun and engaging in the students' eyes shows the model's effectiveness. The negative situations that arise are the problems experienced in the integration with technology. Educational technology integration is an unfinished dynamic process all over the world. Therefore, these problems are likely to be solved. The flipped learning model can be applied with this activity when appropriate conditions are met in educational institutions. More introductory events and seminars can be held on this model. Researchers can conduct studies on flipped learning that highlight teacher size and application floor size. The literature review observed that the studies on the flipped hundred classes were relatively small at the elementary school level. Researchers can research the elementary school level.

The current study provides a general qualitative assessment of the flipped learning model, which is thought to be more involved in education. With this feature, it is thought that it will make an essential contribution to the literature.

Conflict of Interest Statement

The author declares no conflicts of interests.

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Note: The reference to those included in the meta-thematic analysis is made with asterisks (*).

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