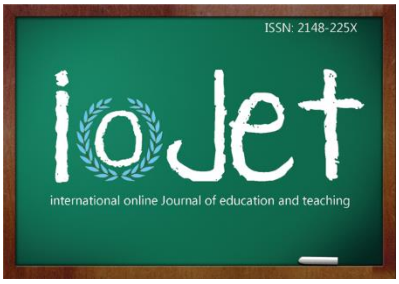

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OPINIONS OF GEOGRAPHY TEACHERS ON THE TEACHING OF SHAPE AND MOVEMENT OF EARTH IN THE 9TH GRADE GEOGRAPHY CURRICULUM

(Research article)

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OPINIONS OF GEOGRAPHY TEACHERS ON THE TEACHING OF SHAPE AND MOVEMENT OF EARTH IN THE 9TH GRADE GEOGRAPHY CURRICULUM

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Abstract

This research aims to examine the views of geography teachers on the teaching of the shape and movement of Earth in the 9th grade geography curriculum. The opinions of 15 teachers on this subject, which is at the 9th grade level in the geography course curriculum, were discussed with the case study model of the qualitative research method. The teachers, working in different socio-cultural regions of Istanbul, were asked nine open-ended questions prepared by the researchers and which attempted to get their opinions in detail. The geography teachers stated that while teaching this subject, students had problems with understanding and using Turkish, the course hours and textbooks were inadequate, there was a high number of students in the classroom, the course content was incompatible with the secondary school program, and there were problems related to the curriculum. The study found similar results to other studies in the literature. In line with these results, it is suggested textbooks should be supported with up-to-date technology to make the subject more interesting, the variety of teaching methods should be increased, geography branch classrooms in schools should be established, teachers' in-service training should be increased, and the number of EBA materials on this subject should be increased.

Keywords: geography education, geography curriculum, shape and movement of earth acquisitions, teacher views.

1. Introduction

Education can be defined as a social process that begins at the birth of a human being and ends at his death. Thus, the individual is expected to develop social, emotional, and mental skills from childhood to adulthood. In this context, education is defined as the process of deliberately creating a desired change in an individual's behavior through his own life (Demirel, 2012, p. 45; Güneş, 2015, p. 137; Öncül, 2000, p. 391). Education is carried out in schools, divided into stages according to the age level of the learner. In this respect, the knowledge, attitudes, skills, values, and learning products that are desired to be acquired by students at all levels are transferred to individuals in a planned and systematic way through curricula in schools (Aktan, 2020).

The Ministry of National Education in Turkey determines the curricula for primary, secondary, and high school education, and the content and the framework of the courses. In line with this program, textbooks and supplements are prepared and distributed to schools free of charge. In schools, students are taught with the textbooks distributed within the framework of the prepared curriculum. In addition to school lessons, students also spend a preparation period for social life with social activities, competitions, social relations, and scientific activities. Thus, students can develop their own direction for the future and discover their

tendencies towards a particular profession. However, in some studies conducted at different education levels, some of the students could not understand one, a few, or all of the school lessons, so they developed different attitudes toward the lessons, and liked or disliked the school lessons (Evirgen & Yıldız İkikardeş, 2019; Yeşilyurt, 2019; İnci, 2019). For example, Evirgen and Yıldız İkikardeş (2019) state that middle school students generally see mathematics as a difficult lesson, while Yeşilyurt (2019) found that factors such as desire, willingness to learn, interest, and love for their field and profession affect the teacher candidates' self-efficacy and belief in learning. In another study, İnci (2019) determined that eighth-grade secondary school students' perceptions of context-based learning environment, interest in the lesson, participation in the lesson, and academic motivation were effective in the scientific success of the students.

The geography course, which is one of the basic courses in secondary education institutions, is a course that attracts the attention of students. However, in some studies (Demirkaya & Arıbaş, 2004; Zaman & Coşkun, 2007; Dikmenli & Çifçi, 2016) some of the students liked this lesson and showed a positive attitude, while others disliked it and had negative attitudes. Some factors such as attitude towards the lesson teacher, liking the teaching method, adequacy of course materials, and course duration effective more students' likes or dislikes of geography lessons (Kocalar & Demirkaya, 2017). The geography lesson on the shape and movement of Earth are seen as "difficult to understand, complex or boring". For example, Özünal (2010) determined that students misunderstood concepts such as a meteor, solar day, and orbital plane regarding the shape, movement, and structure of Earth, as contained in the Science and Social Studies curriculum in primary and secondary school programs (Şahin & İnce, 2020).

Studies carried out in this context reveal that there are some difficulties in the teaching of the learning outcome of "Evaluates the effects of the shape and movement of Earth" (MoNE, 2018) numbered 9.1.4 in the 9th Grades Natural Systems Unit of the Geography Lesson Curriculum (GLC). With this learning outcome, the shape of Earth, the formation of this shape, the results of this shape, the movement of Earth around the sun, the movement of Earth around its own axis, and the results of these movements are explained in detail. Along with this learning outcome, the Solar System, galaxies, planets, and satellites are also mentioned, according to the statement "The place of Earth in the Solar System is also briefly mentioned", as stated in the program. Teaching students to this outcome aims to develop their skills of "perceiving time" and "perceiving change and continuity". In particular, students are given a sense of time regarding annual, seasonal, and daily processes, and they are encouraged to question and comprehend the perception of change and continuity in space and time, and the causes of change and continuity in geographical processes (MoNE, 2018).

While the GLC program of the Ministry of National Education in 2005 (MoNE, 2005) included "position and coordinate skill" regarding the shape and movement of Earth, this skill was not included in the 2018 program (MoNE, 2018). This situation has decreased the attention given to this issue and even the number of gains has decreased. Artvinli (2009) points out that there were mistakes in the skills in 2005 Geography Curriculum learning outcome of the shape and movement of Earth. In their study, Sözcü and Aydınözü (2019) state that the learning outcome of the shape and movement of Earth are in the factual information sub-dimension and the cognitive process dimension is in the evaluation sub-dimension, according to the Revised Bloom's Taxonomy. In addition, this situation indicates that the 9th-grade geography lesson learning outcomes do not show a regular distribution according to the cognitive process dimensions.

There are noteworthy studies in the literature on the teaching of the shape and movement of Earth. The studies related to the research subject are mostly focused on misconceptions,

curriculum, interest in the course, and success status. Studies conducted by Cankara (2008), Geçit (2010), Özünal (2010), Kayacan (2010), Gülüm (2010), and Can (2019) are some of the studies on misconceptions about the shape and movement of Earth. Artvinli (2009), Sözcü and Aydıngözü (2019), Şahin and İnce (2020) conducted studies in the context of the curriculum. Elmas (2006), Dikmenli and Çifçi (2016), and Kösle (2019) conducted studies about the geography, shape and movement of Earth. The studies of Bozkurt (2003), Geçit (2010), Aydın (2012), Kaymakcı and Akbaba (2014), Kocalar and Demirkaya (2015), Babacan and Özey (2017), Şeyihoğlu and Taşkın (2018), Karakuş and Karaman (2019) and Taçyıldız (2020) are studies that examined the success of the geography course and the shape and movement of Earth. Despite the studies carried out in the field, no study has been found that addresses the in-depth views of teachers on this subject. In this respect, this study is expected to contribute to the field. This research is important in terms of determining the difficulties experienced by geography teachers, addressing their experiences, and contributing to finding solutions to this issue.

2. Purpose of the Research and Problem Statement

The study aims to examine the views of geography teachers on the teaching of the learning outcome of the shape and movement of Earth in the 9th-grade geography curriculum. In line with this purpose, the basis of the research is "What are the views of geography teachers on the teaching of the shape and movement of Earth?" In line with the main problem, answers were sought to the following sub-problems:

1- What are the thoughts of the geography teachers about the pre-preparation of students regarding the shape and movement of Earth before they come to the lesson?

2- What do the geography teachers think about the students' interest in the lesson about the shape and movement of Earth?

3- What are the thoughts of geography teachers about the methods and techniques they use while teaching the shape and movement of Earth?

4- What are the tools and materials used by geography teachers while teaching the shape and movement of Earth?

5- What are the thoughts of the geography teachers about the problems they encounter while teaching the shape and movement of Earth?

6- What solutions do the geography teachers offer to better teach the shape and movement of Earth?

3. Method

This study, which was prepared on the basis of the qualitative research method, was designed with the case study model. Qualitative research studies in which data collection methods such as observation, interview, and document analysis are used can be defined as research that aims to reveal perceptions and events in a holistic manner in the environment in which they occur (Yıldırım & Şimşek, 2013, p. 45). Case study designs seek answers to “why” or “how” questions, examine a current phenomenon in its real situation, and give the researcher little control over this situation (Yin, 2003; Yıldırım & Şimşek, 2013). According to Creswell (2020), a case study is a qualitative research design in which the researcher examines a situation in depth with multiple data collection sources such as observations, interviews, and documents. The case study design was therefore preferred for this research examining the in-depth views of geography teachers on the teaching of the shape and movement of Earth.

3.1. Research study group

The research study group consisted of 15 geography teachers working in different districts of Istanbul in the 2020-2021 academic year. Their working hours, school types, and education levels differed. The use of data collection techniques such as interviews in qualitative research, where application and data analysis take a lot of time, has been effective in limiting the number of study groups. The names of the teachers were kept confidential by being coded T1, T2, T3, etc. Due to the qualitative dimension of the research, all the data obtained from the teachers were included in the analysis. Information about the participants is given in Table 1.

Table 1. *Demographic characteristics of educators participating in the study*

Teachers	Gender	Age	Faculty	Graduation	Lesson Hours	Number of In-service training
T1	M	44	Faculty of Education	Bachelor's	15-20 hr	1
T2	F	41	Faculty of Education.	Graduate	26-30 hr	4
T3	M	28	Faculty of Science and Letters	Graduate	21-25 hr	No
T4	M	51	Faculty of Education	Doctor	15-20 hr	2
T5	F	48	Faculty of Science and Letters	Graduate	21-25 hr	5
T6	F	47	Faculty of Science and Letters	Doctorate	21-25 hr	2
T7	F	42	Faculty of Science and Letters	Graduate	26-30 hr	No
T8	M	49	Faculty of Science and Letters	Bachelor's	15-20 hr	1
T9	M	48	Faculty of Science and Letters	Graduate	21-25 ht	1
T10	M	27	Faculty of Science and Letters	Bachelor's	21-25 hr	No
T11	M	50	Faculty of Education	Graduate	26-30 hr	1
T12	F	54	Faculty of Science and Letters	Bachelor's	15-20 hr	1
T13	M	34	Faculty of Education	Bachelor's	21-25 hr	No
T14	M	43	Faculty of Education	Graduate	21-25 hr	No
T15	M	45	Faculty of Education	Bachelor's	21-25 hr	1

As shown in Table 1, the majority of the teachers (10 people) participating in the research were male, the average age was 43, and they were experienced teachers. According to the faculty they graduated from, the majority were graduates of the Faculty of Arts and Sciences (8), while 2 held doctorates, 7 were graduates and 6 held bachelor's degrees. Four 4 of the teachers taught for 15-20 hours, 8 for 21-25 hours, and 3 for 26-30 hours, and all of them stated that they had previously taught the 9th-grade geography lesson. Regarding in-servie training, 5 teachers stated that they never participated in in-service training activities, 6 that they participated once, 2 had participated twice, and 2 had participated in more than 3 in-service training activities. Considering that the research group consists of experienced teachers with different characteristics, the data obtained includes rich content.

3.2. Data Collection Tool

The interview technique was used to examine the views of the geography teachers about teaching the shape and movement of Earth. Interviews are a powerful method as they provide

access to information about unobserved behaviors and allow different opinions to be expressed about observed behaviors (Glesne, 2012, p. 255). A semi-structured interview form was therefore used in the research. In the preparation of the interview form, following a literature scan, a question pool was created. The questions were sent to experts in geography, educational sciences, and linguistics to consider the adequacy, appropriateness, and clarity of the questions. Their opinions were discussed and necessary adjustments were made. The form initially contained 13 questions, but following consultation with the experts, 3 questions on which no consensus was reached, 2 questions that were out of the scope of the research, and 1 question that was not clear and intelligible were removed. A pilot application of the final form was conducted with 2 teachers.

Validity and Reliability in Research

Studies were carried out by the researchers in order to present the data validly and reliably. In this regard, validity, which is the accuracy and reflection of the findings in qualitative research, is defined as the consistency and reliability of research findings (Golafshani, 2003; Yıldırım & Şimşek, 2013). For this reason, it is of great importance to conduct validity and reliability studies for the analysis of data and control of accuracy in qualitative research where data are collected through the interview technique (Kvale, 1996).

With the selection of the participants from different regions of Istanbul, the researcher attempted to obtain results that would reflect the geography teachers' views on the subject in the most accurate way. To strengthen the internal validity of the research questions, the opinions of field, education, and linguistics experts were collected and some corrections were accordingly made to the questions. Direct quotations from the teachers on their views on teaching the shape and movement of Earth are presented in the findings section. This was to increase the validity and reliability of the research findings. For the external validity of the research, the participants were informed about the research process and were able to comfortably answer the questions.

While analyzing the data obtained from the study group for internal reliability, the mutual readings of 2 geography education experts were described in detail. Thus, with the participation of more than one researcher in the analysis and evaluation of the data, an unbiased analysis was made by comparing the coding. The codes and categories were determined and discussed by the researchers as “consensus” and “disagreement”. Miles and Huberman's (1994) formula Reliability = Consensus / (Agreement + Disagreement) was used to calculate the coding reliability. The reliability coefficient between researchers calculated with this formula was .87. This result is at a sufficient level as it is above the acceptable reliability compliance percentage (70%) stated by Yıldırım and Şimşek (2013). As a result of the analyses of the codes and categories created by common decisions, the opinions of the teachers were gathered under six themes. For the external reliability of the research, the data were discussed with previous studies on this subject in the discussion and conclusion part, and the results were conveyed in the most accurate way possible.

3.3. Data Collection and Analysis

Interviews were conducted with the geography teachers to examine their views on the teaching of the shape and movement of Earth in the 9th-grade geography curriculum. The interviews lasted between 20 and 32 minutes. The interview data was transcribed on computer, and after the confirmation from the participants, the data was subjected to content analysis and analyzed by creating codes and categories. The main goal of content analysis is to find the concepts and relationships that can explain the collected findings and to organize and interpret the data in a way that the reader can understand by bringing together similar concepts and

themes (Yıldırım & Şimşek, 2013). In the research, the basic concepts were accepted as themes, the teachers' answers were coded, and categories were created. The basic concepts are presented in detail in the findings section in the form of tables and concept maps. The geography teachers' direct expressions are concealed and they are referred to by code, T1, T2, T3, etc. In this way, the views of geography teachers are reported as they were.

4. Findings

4.1. Findings on the thoughts of geography teachers on the pre-preparation of the students for the shape and movement of Earth before they come to the lesson:

Geography teachers grouped their opinions about the shape and movement of Earth in two categories: positive and negative. Most of the teachers held negative views (14). Only 1 teacher gave a positive opinion 1 (Table 2).

Table 2. *Geography teachers' thoughts about the pre-preparation of the students regarding the shape and movement of Earth before coming to the lesson*

Categories	Codes	Number of Participants	Participants
Students' preparations are not sufficient..	I don't think it's enough.	5	T2, T6, T7, T14, T15
	No, I don't find it enough.	4	T3, T8, T10, T11,
	I find it absolutely inadequate..	2	T9, T12,
	They don't come prepared.	2	T5, T13
	I can't get the output I want.	1	T4,
Students' preparations are sufficient.	I think it's enough	1	T1

The teacher (T1) who expressed positive views said, "I think it's enough. I understand this from the feedback I received from the students during the lesson." Other teachers who gave negative views stated that the students did not come to the lesson prepared, were not equipped with course equipment, did not repeat the past topics, and did not do the homework given.

In this regard, T3 stated that this subject remained abstract in students' minds, and therefore they could not understand the subject. For example, "The fact that the subject of Earth's shape and movements is perceived as abstract by the students and that they cannot find examples of this in their daily lives keeps their interest low. We try to teach the students who attend the 9th grade geography lesson in terms that they have never heard or heard very little before. Thus, the students approached this and similar lessons with a distance".

Participant T14 stated that the subject is somewhat outdated and that new ideas must be found in order to maintain students' attention: "These topics do not have content that can attract students' attention. We were asking the same question a thousand years ago. We question what the shape of Earth is and what the consequences are. It is a very old question, and even if our students do not know the answer, it is a very familiar question, and it does not seem fun to them. However, the students of our age are primarily open to content that entertains them…" Participant T7 expressed his/her opinion as follows: "Students do not come to the lesson prepared. When you say you will check, they provide lesson tools only because they are anxious about grades; and they do not have a regular lesson repetition habit. They generally find it sufficient to study before the exam. In addition, when homework is given, they usually

do research by sticking to one website. I am of the opinion that they do not fully know how to do research".

Some teachers expressed that the students were equipped with the course materials, they repeated the past topics, and they did the homework given. While participants T3 and T5 stated that "students sometimes do their preparation for the lesson when given as homework", T4 referred to students' successful work: "they are good at homework and research".

When asked their opinions about why students do not come to the lesson prepared with probing questions, teachers put forward different reasons. The most common reasons (Figure 1) were student indifference, the abstract concepts contained in the subject, students' lack of readiness, teachers' insufficient guidance, laziness and technology addiction, the pass-fail grading system, and comfortable habits learnt during the Covid-19 pandemic.

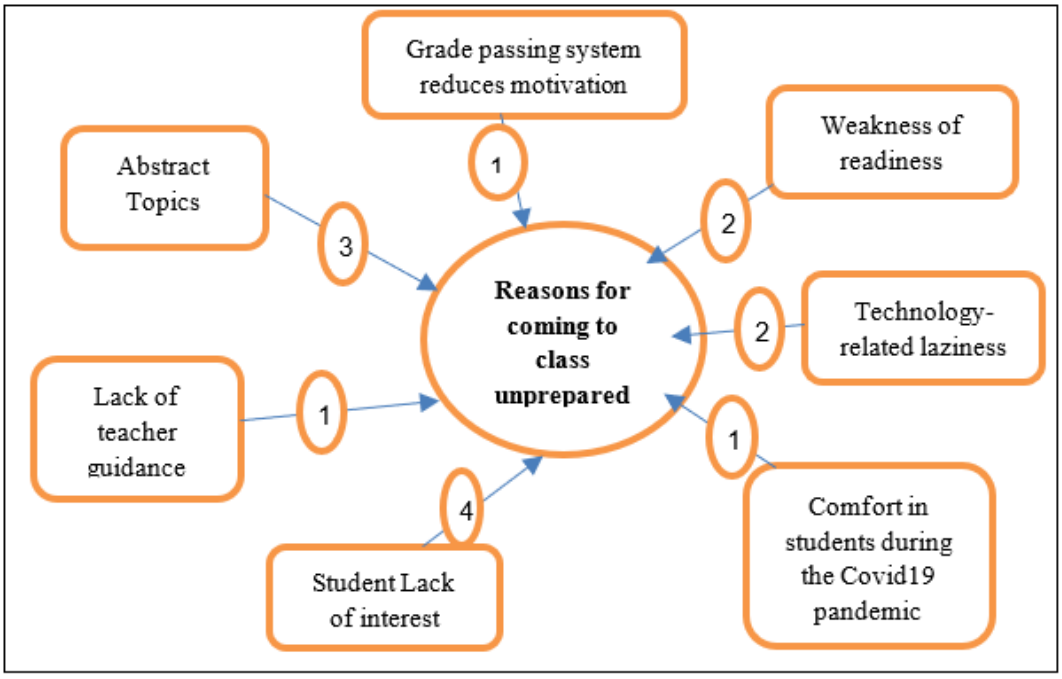

Figure 1. Distribution of reasons for students coming to class unprepared

As can be seen in Figure 1, geography teachers seriously deal with the issue of preparing students in the learning outcome of the shape and movement of Earth, and the students follow in this regard.

4.2. Findings on the thoughts of geography teachers about the students' interest in the lesson about the shape and movement of Earth:

The thoughts of the geography teachers about the interests of the students in the lesson about the shape and movement of Earth are classified into two categories: interested and uninterested. Accordingly, 8 teachers stated that the students are interested in the lesson, while 7 stated that the students are uninterested in the lesson and the subject; however, the rates are close (Table 3).

Table 3. *Geography teachers' thoughts on students' interest in the lesson about the shape and movement of Earth.*

Categories	Codes	Number of Participants	Participants
Students are interested in this topic.	Interested in the subject, interesting	5	T1, T4, T6, T7, T8
	mostly curious	1	T5,
	highly motivated.	1	T2,
	They listen eagerly.	1	T12
Students are not interested in this subject, they are prejudiced.	The number of people who state that it is interesting is very few.	2	T3, T15
	Because it is a difficult subject to grasp.	1	T14
	Despite their relevance, the subject seems rather abstract and difficult to understand for most students.	2	T10, T11
	In recent years, there have been no questions on this subject in university exams.	1	T9
	80% of students are biased towards the subject	1	T13

Geography teachers' reasons for students' "Interest and Disinterest" about the shape and movement of Earth are visualized in Figure 2.

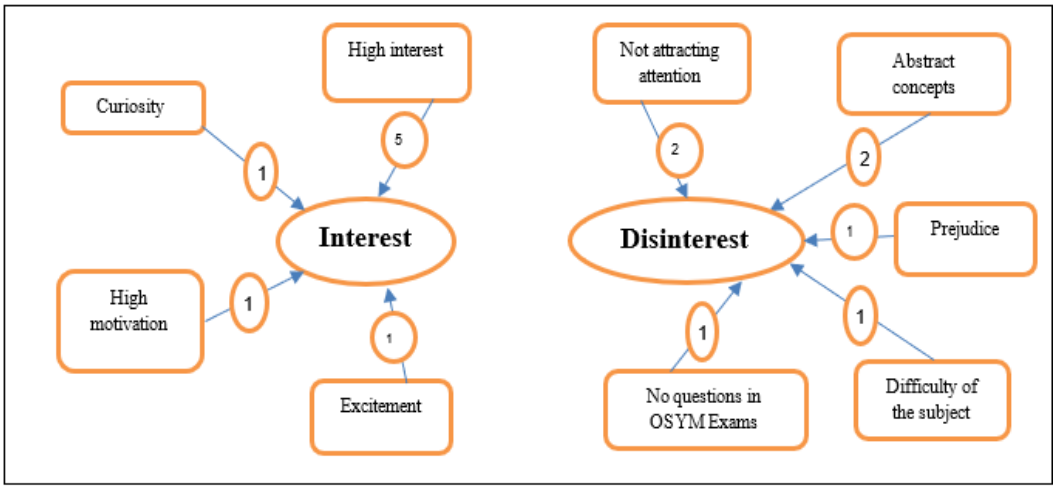

Figure 2. Distribution of the reasons students are interest and disinterest in the course

Table 2 and Figure 3 show a classification of the opinions of the geography teachers who stated that the students are interested in the shape and movement of Earth: students are highly interested in this subject, the subject is interesting and arouses their curiosity, their motivation is high and they listen to the subject with enthusiasm. As T2 said, “their attitudes are positive, their interest and motivation is extremely high…” and T1 said“They listen to the subject with interest. The subject of the shape and movement of Earth interests them more than any other subject.” On the other hand, there is a conditional interest, such as that expressed by T10. “The content of the subject is actually quite interesting. However, students with low academic self-

perception start to distance themselves from the course as soon as there is a slight misunderstanding at the beginning as the subject is quite abstract. Therefore, although they may be interested, the subject seems rather abstract and difficult to understand for most students."

According to the opinions of the geography teachers who stated that the students were uninterested and prejudiced about the shape and movement of Earth, the following points arose. It is understood that this subject is difficult to grasp, does not attract students' attention, is quite abstract to most students, and, as there have been no questions on this subject in university exams in recent years, 80% of students have a negative approach to the subject and often distance themselves from the course. T9 expressed this follows: "This subject is one of the most difficult subjects to be taught by the teacher to the student. It is a problem for young people because they think they can learn by rote. It is beneficial for them to see these subjects in the Science course in secondary school, but I can say that the fact that no questions have been asked about this subject in university exams in recent years has reduced interest in this subject." T13 drew particular attention to students' prejudices:"I think that more than 80% of my students have a prejudice against the subject. The rate of the number of students who think that it is an understandable and easy subject is 10% at most." Another participant (T14) stated that the students experienced conceptual confusion due to difficulties obscuring the subject. "I don't think they are very interested. I think this issue is a crossroads for them, they will either memorize it item by item or try to find its logic. In addition, it is the most difficult subject to explain in the 9th grade and to get the student to comprehend."

In the probe questions asked in connection with this, whether the students listened to the lesson or not, the majority of the teachers (13) stated that they did. To the question of whether the students liked the lesson, 9 teachers stated they liked it, 4 teachers that they partially liked it, and 2 teachers that they expressed dislike. When asked about the level of student motivation in the lesson, 7 teachers stated it was high, 6 teachers that it was medium, and 2 teachers said it was low. Almost all the teachers (14) stated that homework was done on time.

4.3. Findings related to the methods and techniques used by geography teachers in the subject of Earth's shape and movement:

The methods and techniques used by geography teachers while teaching the subject of the shape and movement of Earth are grouped into 7 categories (Table 4).

Table 4. *The methods and techniques used by geography teachers while teaching the shape and movement of Earth*.

Categories	Methods	Number of Participants	Participants
Continuously Used Methods.	Narration (recognition)	15	T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15
	Demonstration	10	T1, T2, T3, T4, T5, T6,T8, T9, T10, T11, T12, T13, T14
	Question-Answer	8	T1, T4, T5, T7, T8, T11, T13, T15
	Drama	3	T3, T10, T11
	Case Study	1	T9
	Field Study and Observation	1	T5
	Problem-based Learning	1	T5

As shown in Table 4, the narration (15) comes first among the methods and techniques used by geography teachers while teaching the shape and movement of Earth. The second method used is demonstration (10). The third method used by more than half the geography teachers is question-answer (8). Apart from these, drama (3), case study (1), field study and observation (1) and problem-based learning (1) are among the methods used by geography teachers (Figure 3).

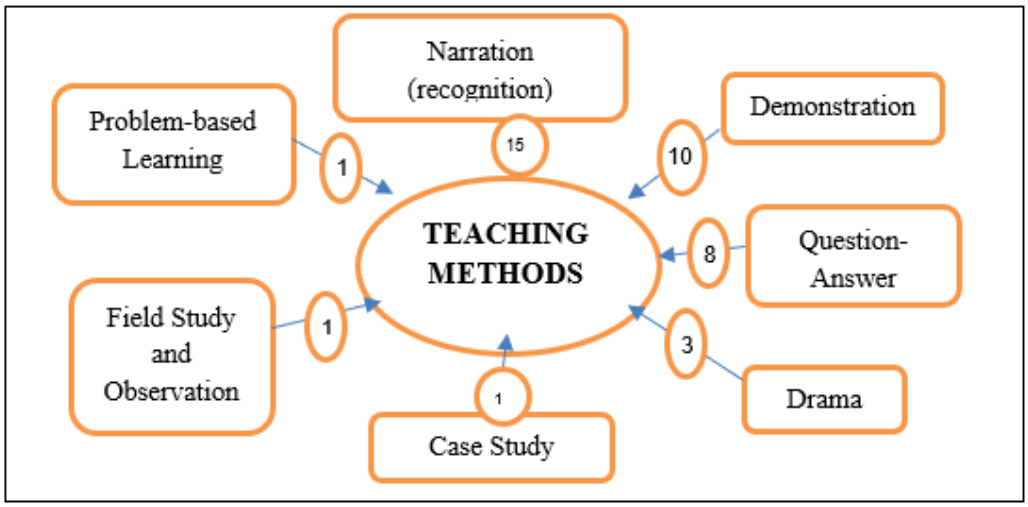

Figure 3. Range of Teaching Methods used by geography teachers in the lesson

Regarding teaching methods, some teachers stated that they use many methods together, thus creating a more effective learning atmosphere. T4 expressed his views on this subject as follows: "Lessons accompanied by slides, oral and written expression, and question-answer methods are used. Although these methods are classical, I benefit greatly from them. I put myself in the place of the student in the lecture, predicting where there will be breaks and keeping them alive with the question-answer method. I could not get the efficiency that I got from the lesson, which I explained step by step by drawing the annual movement of Earth, by applying any other method. With some animation and video support, at least an image appears in their minds."

Some teachers stated that they could not use methods and techniques other than narration and question-answer due to the crowded classrooms and insufficient course time. T13 explained as follows: "The technique I use in the processing of the subject is mostly the classical question-answer technique. I think this technique is moderately effective. I think that different teaching methods and techniques can be used. However, reasons such as the high number of students in the class, the insufficient physical condition of the class, and the lack of lesson hours unfortunately negatively affect the use of these methods and techniques."

Some teachers, on the other hand, expressed opinions on the development of alternative applications by using new technologies. T6: "While the subject of the shape and movement of Earth is being discussed, of course, while they are able to grasp the subject by seeing it on a globe, I am in favor of explaining this subject by watching a video from EBA and supporting it with slides. Even if it is possible, it would be much better if we could reinforce the subject with three-dimensional glasses in the laboratory environment."

4.4. Findings on the tools and materials used by geography teachers while teaching the shape and movement of Earth:

Geography teachers use many different tools and materials while teaching the subject of the shape and movement of Earth. These tools and equipment are grouped into 6 categories (Table 5).

Table 5. *Data on the tools and materials, and techniques used by geography teachers while teaching the shape and movement of Earth*

Categories	Methods	Number of Participants	Participants
Tools used	Interactive (smart) board and its applications (video, pictures, animations, youtube and EBA content)	10	T1, T2, T3, T4, T5, T6, T9, T10, T12, T15
	Globe, model globe, luminous globe	8	T1, T2, T4, T6, T9, T10, T12, T15
	Maps	4	T1, T4, T9, T15
	Classboard (for drawing)	2	T4, T9
	Virtual reality glasses	1	T14
	Textbook	1	T15

As seen in Table 5, the interactive board and its applications (10) come first among the tools and materials used by geography teachers while teaching the shape and movement of Earth. The second most used tools are globes, model globes, luminous globes (8) and the third instrument is maps (4). Apart from these, classroom boards (2), virtual reality glasses (1) and textbooks for drawing are among the tools used by geography teachers (Figure 4).

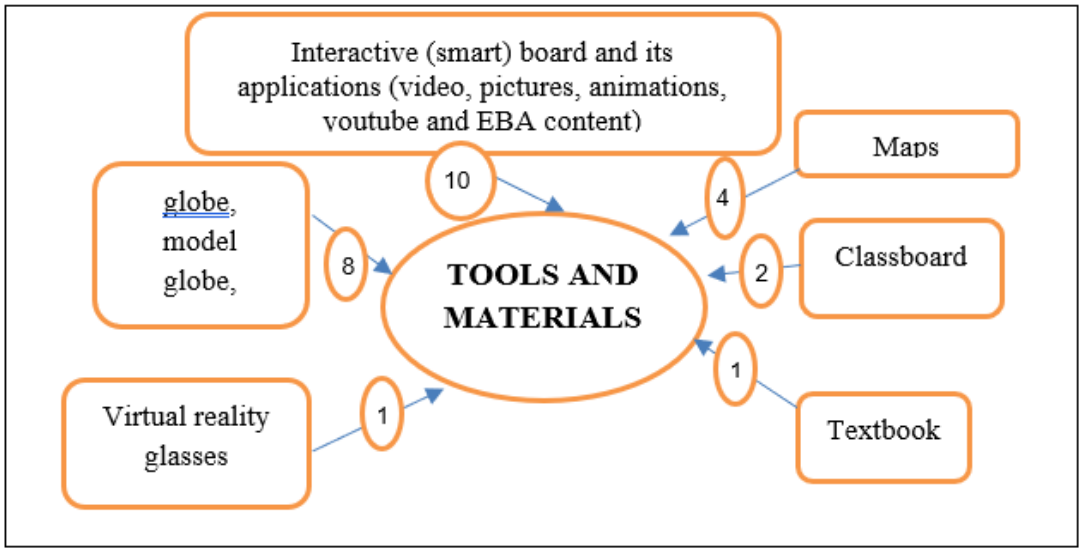

Figure 4. Range of tools and materials used by geography teachers in the lesson

4.5. Findings regarding the problems faced by geography teachers while teaching the shape and movement of Earth:

The problems that geography teachers encounter while teaching the shape and movement of Earth are grouped into 6 categories (Table 6).

Table 6. *Data on the problems that geography teachers faced while teaching the shape and movement of Earth.*

Categories	Codes	N.Participants	Participants
Problems faced in understanding and using Turkish	Inability to understand foreign terms and concepts	4	T5, T9, T12, T13
	Inability to express concepts correctly	7	T3, T5, 06, 07, T9, T10, T13
	Inability to understand the problems	4	T4, T7, T9, T14
Problems with lesson time	Lesson time is enough.	3	T1, T2, T5
	Lesson time is not enough. Should be increased.	12	T3, T4, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15
Problems in terms of the Geography Curriculum	There are problems in delivering the curriculum.	9	T3, T4, T6, T8, T9, T10, T11, T13, T14
	Not suitable for student level	4	T10, T11, T12, T14
	Too many details are given.	3	T4, T9, T14
Problems faced in terms of textbooks	Textbooks are sufficient..	7	T1, T2, T3, T4, T5, T7, T9,
	Textbooks are insufficient and should be improved.	8	T6, T8, T10, T11, T12, T13, T14, T15
Deficiencies in geography subjects from the secondary school period	Incompatibility with the secondary school program	7	T3, T4, T6, 09, T12, T13, T15
	Not knowing basic concepts	5	T1, T5, T7, 09, T13
	Waste of time due to forgotten issues	2	T2, T7
	Lesson perspective	2	T5, T11
Problems faced in terms of class structure	Lack of a geography class	13	T2, T3, T4, T5, T7, T8, T9, T10, T11, T12, T13, T14, T15
	Excess number of students	9	T5, T6, T7, T8, T10, T11, T12, T13, T15
	Inability to perform some teaching methods	2	T10, T13,

Table 6 shows that the problems geography teachers face while teaching the subject of the shape and movement of Earth are problems in understanding and using Turkish, problems with lesson time, problems in terms of the Geography Curriculum, problems in terms of textbooks, deficiencies in geography from the secondary school period, and problems in terms of class structure.

Understanding and using Turkish is the most difficult problem that geography teachers face when teaching about the shape and movement of Earth. While some teachers did not experience any problems, some stated that they had faced some problems. For example, T1 stated, “Since the students in the schools I work at have a good command of Turkish, I did not have any problems in this regard”. On the other hand, T10 said, “Students generally have problems in understanding and using Turkish. Unfortunately, they do not leave secondary school well-prepared.” The opinions about the lesson time, which is one of the problems that teachers face

regarding the shape and movement of Earth, are divided into two groups. Although the number of those who stated that the weekly lesson hours were sufficient (3) was small, the majority of the teachers (12) stated that the lesson hours were not sufficient and should be increased. On this subject, T5 said, "Geography course hours are sufficient. Transferring the subject of landforms to the 10th grade lightened the 9th grade geography curriculum." On the other hand, T11 said, "Since the subject is abstract and requires imagination, not all students can perceive it at the same time. Sometimes we talk about a topic 4-5 times. For this reason, he stated that the number of 9th grade geography lessons should be increased."

One of the problems that geography teachers face while teaching the shape and movement of Earth is related to the Geography Curriculum. The problems in this regard are grouped into three categories: not being able to complete the curriculum (9), unsuitable curriculum for the level of the student (4), and too detailed curriculum (3). Participant T4, who especially complained about the curricula being too detailed, expressed his opinion on this subject as follows: "Our achievement on this subject is "09.01.04 - Evaluates the effects of the shape and movement of Earth". We are drowning in too much detail to give this achievement. Because we are worried about the questions that will come up in YKS. We actually need to get over the TYT AYT anxiety based on the MoNE learning outcomes." Another participant stated that the anxiety of not being able to finish the curriculum is an obstacle to fully understanding the subject. T6 stated, "2 hours is definitely not enough, since the 9th grade is basic and somewhat difficult for students to understand, so the anxiety of educating the curriculum cannot be productive in causing learning losses."

Textbooks are one of the problems faced by teachers while teaching the shape and movement of Earth. More than half the geography teachers (8) stated that geography textbooks are insufficient. For example, S10 said, "Textbooks are much better than in the past. But there are definitely areas that need improvement." T12 stated: "If it is supported with images and videos, it will be sufficient no matter how well it is explained, the book alone is not enough." On the other hand, other teachers stated that there was no problem in terms of textbooks. T1 said, "The subject explanations, examples and figures in the books are sufficient." T7 said, "I believe it is quite enough for a student who wants to study and learn. The visuals in the book may be clearer if sufficient information is given in the articles. When they see paragraphs, they find it difficult to read and unfortunately their eyes are frightened. I think this is related to the lack of reading habits."

The deficiencies in learning geography subjects from the secondary school period are one of the problems faced while teaching the shape and movement of Earth. The issues here are classified into four categories: incompatibility with the secondary school curriculum (7), lack of basic concepts (5), wasting time due to forgotten issues (2), and perspective on the lesson (2). Geography teachers especially complain that the 9th grade geography program is incompatible with the curriculum and the information taught in secondary school, and that the students pass into high school without learning the basic concepts. T1 said, "Students finish secondary school almost without even knowing the definition of geography. They do not have a grasp of the basic concepts. This situation complicates the teaching of the subject." T5 drew attention to the fact that students come to high school deprived of even basic level knowledge: "While the first foundations of geography literacy should have been laid, students come to high school without knowing their environment, country, and place of their country in the world. The students attend the lesson with an exam-oriented memorization tendency. They usually do not realize permanent learning because they have a point of view of what it will do for me…" T13 pointed out the difference in knowledge level between secondary school and high school with the statement, "As there is information about the subject at a simple level at the secondary

school level, the abundance of topics and concepts in the 9th grade negatively affects the learning level of the student."

Classroom structure is one of the problems that geography teachers face while teaching the shape and movement of Earth. The problems are grouped into three categories: the absence of a special geography class (12), the excess number of students in the classes (9), and the unsuitability of the classes for some teaching methods (2). Apart from 3 teachers who have geography classes in their schools, the teachers said they want to teach in a special geography class. T13 said, "I do not use a special classroom or laboratory. I can say that such a special class will have positive effects on teaching the subject and student readiness." T5 complained about the crowded classrooms, saying, "Crowded classrooms are a negative factor in the processing of all subjects." He expressed his opinion as "especially while teaching in the form of practice, activity, and question-answer." Again, on the subject of class student density, T13 expressed the difficulties she faced during teaching, saying, "Since the number of lesson hours is low and the number of students in the classrooms is high, it requires teaching by giving classical lectures."

4.6. Findings regarding the solutions suggested by the geography teachers to better teach the subject of the shape and movement of Earth:

The solutions proposed by the geography teachers for better teaching the subject of the shape and movement of Earth are grouped into 4 categories (Table 7).

Table 7. Data on the solutions offered by geography teachers to better teach the subject of the shape and movement of Earth.

Categories	Codes	N. Participants	Participants
In teacher education	The quality of teacher education should be increased in universities	12	T2, T4, T15,
	In-service training should be opened in all geography subjects		T4, T7, T10
	Financial resources should be created for professional development		T6, T14
	Participation in in-service training should be mandatory		T15
	In-service training should be repeated frequently		T9
	In-service training should be opened according to today's needs		T14
	Teachers should not be assigned duties other than the teaching profession in schools.		T4
In practice	In-class activities should be increased	12	T1, T2, T9, T11
	The use of technology in the lesson should be increased		T12, T13, T14
	Field work should be increased		T6, T12
	Material (such as mock-ups) development activity should be put		T9, T10
	Project-based training should be followed		T5,
In the supply of tools and materials	The Ministry's production of tools that require technical knowledge such as animation and making them available to teachers	11	T3, T4, T5, T10, T11, T13, T14
	Tools and materials related to the subject should be available in schools.		T8, T11

	Documentation on the subject should be diversified		T13
	The right course resource should be used		T2,
In the Learning Environment	A branch class should be created	6	T2, T3, T6, T10, T13, T15

Solutions offered by geography teachers for better teaching the shape and movement of Earth are: teacher training (12), practice (12), supply of tools (11), and learning environment (6) (Table 7). The teachers especially drew attention to teacher training, emphasizing in-service training at universities. Increasing the quality of teacher education in universities and keeping the knowledge of teachers up-to-date with in-service training were the most mentioned issues. T15 said, “To teach better, we, the teachers, should also be better trained on this subject. The quality of university education should be increased and in-service training should be taken seriously”. T2 said: “When I started working with post-university students, I felt the need to improve myself.” He pointed out the need for a post-university education saying, “I researched it myself". T9 emphasized in-service training plans, saying, “We are not aware of in-service courses, and the place and time of the courses often coincides with the curriculum.”

Geography teachers offered suggestions on increasing classroom activities, focusing on the use of technology, conducting field studies, doing material (models) development activities, and following project-based education for a better understanding of the subject. T2 said, “The correct use of resources is very important for both the teacher and the student. Animations related to the subject can be watched. The use of luminous sphere models is important in terms of concretizing the subject.” T9 stated, “It is necessary to leave memorization training and increase the visual elements in order to make the subject comprehended.” He even suggested preparing concrete materials with the suggestion that “permanent learning can be achieved by having students prepare models and boards on the subject and display them continuously in the classrooms.” Finally, T14's opinion raised this issue: “The solar system can be comprehended by creating high-quality, high-resolution animations and creating virtual environments through virtual reality glasses and software. In addition, a concrete 3D model of this should be created and distributed to schools.”

Geography teachers' production of tools that require technical knowledge, such as animation, relies on the Ministry providing equipment for better teaching of the shape and movement of Earth. This should available to teachers, and materials and the right resources should be kept in schools. T10 said, “The material should definitely be developed. 3D portable devices can be sent to schools. This situation can be presented to students in a more realistic way. Orbit, sun, earth, etc. materials can be made in 3D in accordance with reality and can be shown to the students in the classroom.” T5 said, “I think it would be appropriate to add video animation visuals to the EBA Portal rather than lectures. The ability to navigate from books to appropriate websites with the QR code attracts the attention of these children.” He also drew attention to the development of the EBA portal, saying “an additional resource rich with activities would be very effective in the learning of students”.

Another solution proposed by geography teachers for better teaching the shape and movement of Earth is the creation of a geography branch class in schools. T3 drew attention to this issue, together with 5 other teachers, with the idea that “I think that the special areas of the geography course will facilitate the lecture and accelerate the learning”. A connected issue is the lack of classrooms, which is a problem raised in the previous research question.

5. Discussion, Conclusion and Recommendations

The geography teachers mentioned that the students did not prepare for the subject of the shape and movement of Earth before they came to the lesson, did not come equipped with course equipment, did not repeat the past topics, and did not do the homework given. Factors such as student indifference, the abstract concepts, students' lack of readiness, inadequate teacher guidance, comfortable habits formed during the COVID-19 pandemic, the negative effect of the grade passing system, laziness, and technology addiction are the reasons for this situation. According to the results of Atila and Sözbilir's study (2013), it is important for students to do the homework given before the next lesson and to come prepared for meaningful learning.

We can conclude that the subject of the shape and movement of Earth is handled seriously by geography teachers and students are closely followed on this subject.

Geography teachers' opinions about the students' interest in the lesson on the shape and movement of Earth were classified into two categories: interested and disunintested. More than half the teachers (8) stated that the students were interested, while the others (7) stated that they were uninterested. This result coincides with the result of Dikmenli and Çifçi's (2016) study that found the expressions about the most liked topics in the geography lesson and the expressions about the most disliked subjects in the geography lesson also include the shape and movement of Earth. Geography teachers, who stated that the students were interested, stated that the students were highly interested in this subject, that this subject aroused curiosity in the students, that their motivation was high, and that they listened to the subject with enthusiasm. Of the teachers who stated that the students were uninterested and prejudiced, it was concluded that the subject was difficult to grasp, did not attract students' attention, seemed abstract to the students, no questions were asked in the university exams, and 80% of the students were prejudiced against the subject. The results of the low interest are in line with the research results of Bozkurt (2003), Elmas (2006), Aydın (2012), Kaymakcı and Akbaba (2014), Şeyihoğlu and Taşkın (2018). Kaymakcı and Akbaba (2014) conclude that the shape and movement of Earth are among the geography topics that social studies teacher candidates could not learn about in their past education experiences.

For geography education, many teaching methods and techniques are used. According to the results, there are 7 categories of method and technique used by the geography teachers in the subject of the shape and movement of Earth. While the method most commonly used by geography teachers is narration, demonstration and question and answer are also among the most frequently used methods. On the other hand, drama, case study, field study and observation, and problem-ased learning drew attention as the methods used. Ünlü (2014, p. 142) gathered the teaching methods used in geography education under 16 categories. According to the research findings, the fact that the geography teachers participating in the study focused on only three of these teaching methods shows that their teachers need in-service training in terms of teaching methods and techniques. On the other hand, it is thought that the ease of the interactive whiteboard and its usefulness are also effective in the fact that teachers laregly prefer demonstration. Bozkurt's (2003) study concluded that the lack of the travel observation method pushed the students into rote learning. Research conducted by Can (2019) concluded that teaching with the concept map technique for the shape and movement of Earth is not appropriate.

From the research findings we can conclude that there are 6 categories of tools and equipment used by the geography teachers while teaching the shape and movement of Earth. The first of these tools and equipment used by the teachers is the interactive board and its applications, spheres, maps, classboard, virtual reality glasses, and textbooks. Research by Şeyihoğlu and Taşkın (2018) concludes that geography teachers use mobile, 3-dimensional,

colorful, remote sensing-method products. According to Çoban and Tamusta (2021), materials are important learning tools in the teaching process. By means of materials, abstract concepts and information are concretized and become more understandable, contributing to education.

From the research findings, we can conclude that there are 6 categories of the problems faced by geography teachers while teaching the subject of the shape and movement of Earth: understanding and using Turkish, course hours, curriculum, textbooks, deficiencies in the secondary school period, and problems related to class structure. The results show that geography teachers have problems in the lessons because some students have difficulties in understanding what they read and cannot express the concepts correctly. Studies by Bozkurt (2003), Geçit (2010), Şeyihoğlu and Taşkın (2018), Karakuş and Karaman (2019), and Taçyıldız (2020) conclude that students confuse the concepts of the shape and movement of Earth. Likewise, Cankara (2008), Gülüm (2010) and Kayacan (2010) found that most of the students had difficulties in latitude-parallel, longitude-meridian, mathematics-special position, polar circle, angular velocity, linear velocity. They conclude that they confused many concepts, such as the periphery or the pole, or they had misconceptions.

Geography teachers have problems due to insufficient course hours, the complexity of the geography curriculum, the anxiety of completing the curriculum, the inadequacy of textbooks, the inadequacy of students from secondary school, and their ignorance of basic concepts. In addition, it was concluded that the crowded classrooms and the absence of geography classrooms reflected negatively on the lessons of the teachers.

The results of the research suggest that there are 4 categories of solutions offered by the geography teachers for better teaching of the shape and movement of Earth. Increasing the quality of teachers with a quality teacher education and in-service training is one of these categories. Increasing classroom activities, using technology effectively, increasing the number of field studies and material development activities, and, finally, creating a geography class are among the important suggestions offered by the teachers. These findings are consistent with the findings of Babacan and Özey (2017). Babacan and Özey (2017) conclude that a quarter of the geography teachers wanted to receive in-service training on the shape and movement of Earth. According to this result, this subject is among the top ten subjects for which in-service training is requested the most. Kösle (2019) concludes that interesting and entertaining geographical information supported course materials will provide an easier way to learn about the shape and movement of Earth.

Although practices for teaching the shape and movement of Earth, one of the basic subjects of geography education, are different, the aim is to provide a good education. It is important for geography teachers to be able to explain the subject in the best way with the tools and teaching methods they use, even if the students do not come to the lesson prepared and show no interest in the lesson. Teachers address the subject of the shape and movement of Earth using tools and methods according to the current situation, the structure of the class, the level of the students, and the possibilities. On the other hand, the research results suggest some problems were encountered during the course. Reading Turkish, course hours, curriculum, textbooks, and problems from the secondary school period are the most important problems in teaching this subject. On the other hand, solution suggestions for eliminating these problems and providing a more permanent learning opportunity can be listed as follows:

- To increase readiness of students who do not come to the lesson prepared. Students can be followed more closely by giving homework in terms of preliminary preparation.

- Students brought up with today's technology do not use textbooks, which are one of the basic teaching tools of geography lessons. For this reason, data matrix applications of textbooks can be supported with videos and web pages, and an activity book can be created.

- The fact that geography teachers concentrate on only a few teaching methods while teaching their lessons shows that they have deficiencies in this regard. Practical in-service training activities on teaching methods can be increased.

- Teaching materials on this subject can be reproduced in universities for teacher training.

- For a better understanding of the subject, geography classes can be created in schools and lessons can be taught in these classes.

- Course tools and materials can be developed on this subject.

- By increasing the animation rate on the EBA portal of the Ministry of National Education, reaching more students, the subject can be learnt more permanently.

References

Aktan, O. (2020). İlkokul matematik öğretim programı dersi kazanımlarının yenilenen Bloom Taksonomisine göre incelenmesi. [Investigation of primary school mathematics curriculum lesson acquisitions according to renewed Bloom taxonomys]. Pamukkale Üniversitesi Eğitim Fakültesi Dergisi,(48), 15-36. doi: 10.9779/pauefd.523545, 15-36.

Artvinli, E. (2009). Coğrafya programının öngördüğü coğrafi becerilere 9. sınıf coğrafya ders kitabında erişi düzeyi. [The level of the access to geographic skills in the 9. year geography textbook according to geography currıculum]. Erzincan Eğitim Fakültesi Dergisi, 11(2), 51-66. doi: https://doi.org/10.37217/tebd.812110

Atila, M. E., & Sözbilir, M. (2013). Fen ve teknoloji dersi öğretmenlerinin öğrenmeye yönelik algıları ile ilgili nitel bir çalışma. [A qualitative study of perceptions of science and technology teachers towards learning] Uludağ Üniversitesi Eğitim Fakültesi Dergisi 26 (2), 321-341. doi: https://doi.org/10.17556/jef.45868

Aydın, F. (2012). Sosyal bilimler lisesi öğrencilerinin coğrafya dersinin öğretimine yönelik görüşleri. [Social Sciences high school students opinions towards teaching of geography course] . Kastamonu Eğitim Dergisi, 20(3), 1035-1050. doi: https://doi.org/10.24106/kefdergi.4039

Babacan, Ş., & Özey, R. (2017). Coğrafya öğretmenlerinin coğrafya öğretim programındaki öğrenme alanlarına göre hizmet içi eğitim ihtiyaçları. [Geography teachers' in-service training needs in geography teaching program by their learning]. Marmara Coğrafya Dergisi, (36), 1-15. doi: https://doi.org/10.14781/mcd.17180

Bozkurt, A. (2003). Coğrafya Dersi Öğretiminde Fiziki Coğrafya Konularının Yeri ve Öğretimi (Yüksek Lisans Tezi). [Teaching of physical geography subjects in the geography education] (Master's thesis). İstanbul: Marmara Üniversitesi, Eğitim Bilimleri Enstitüsü. doi: https://doi.org/10.29129/inujgse.393951

Can, N. (2019). 9. sınıf coğrafya konularının kavram haritası kullanımı bakımından uygunluğunun öğretmen görüşleri ile değerlendirilmesi:Konya örneği (Yüksek Lisans Tezi). [Evaluation of the suitability of 9th grade geography subjects in terms of concept map use with teachers' views Konya case]. (Master's thesis). Konya Necmettin Erbakan Üniversitesi, Eğitim Bilimleri Enstitüsü. doi: https://doi.org/10.16992/asos.14216

Cankara, Ö. (2008). Ortaöğretimde Coğrafi Konum Konusunun Öğretimi (Yüksek Lisans Tezi). [Teaching of geographical position at secondary education] (Master's thesis). Konya Selçuk Üniversitesi, Sosyal Bilimleri Enstitüsü.

Creswell, J. W. (2020). Nitel araştırma yöntemleri. [Qualitative Research Methods] 5th Ed., M. Bütün and S.B. Demir, Çev.(Eds.). İstanbul: Siyasal Kitapevi.

Çoban, A., & Tamusta, P. (2021). Sosyal bilgiler dersinde coğrafya ile ilgili kavramların öğretiminde model küre kullanımının önemi. [The importance of the use of the model sphere in teaching geography-related concepts in social studies course]. Türk & İslam Dünyası Sosyal Araştırmalar Dergisi, 8 (31), 11-30. doi: https://doi.org/10.29228/tidsad.54012

Demirel, Ö. (2012). Eğitim sözlüğü [Dictionary of education]. Ankara: Pegem A Yayıncılık.

Demirkaya, H., & Arıbaş, K. (2004). Sosyal bilgiler öğretmenliği üçüncü sınıf öğrencilerinin coğrafya dersine yönelik tutumlarının değerlendirilmesi. [Investigation of the attitudes of the third year students at the preservice Social Studies Education Department towards

geography course] Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, (12), 179-187. doi: https://doi.org/10.9775/kausbed.2016.037

Dikmenli, Y., & Çifçi, T. (2016). Lise öğrencilerinin coğrafya dersine yönelik görüşleri. [High school students' views about geography course] Turkish Studies-International Periodical for the Languages, Literature and History of TurkishorTurkic 11(3), 911-928 DOI Number: http://dx.doi.org/10.7827/TurkishStudies.9108.

Elmas, B. (2006). Ortaöğretim Coğrafya Eğitiminin Temel Sorunları: Kartal İlçesi Örneği (Yüksek Lisans Tezi). [The problems of geography education in Kartal County) (Matser's Thesis). Marmara Üniversitesi, Eğitim Bilimleri Enstitüsü. doi: https://doi.org/10.16992/asos.14216

Evirgen, O., & Yıldız İkikardeş, N. (2019). 7. sınıf matematik dersinde zorlanılan konulara ilişkin öğrenci görüşlerinin incelenmesi. [Examination of the opinions of the students about the difficult topics in 7th grade mathematics lesson]. Balıkesir Üniversitesi Fen Bilimleri Enstitüsü Dergisi , 21(1), 416-435 . DOI: 10.25092/baunfbed.548560.

Geçit, Y. (2010). 9.Sınıf öğrencilerinin coğrafya müfredatı Türkiye öğrenme alanı içindeki bazı kavramları anlama düzeyleri. [Understanding level the some conceps in the Turkey learning area in the geography curriculum of 9th grade students]. Marmara Coğrafya Dergisi (21), 134-149.

Glesne, C. (2012). Nitel araştırmaya giriş. [Qualitative researches: An introduction] A. Ersoy & P. Yalçınoğlu (Trans. Ed.). Ankara: Anı Yayıncılık.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. The qualitative report, 8(4), 597-606.

Gülüm, K. (2010). Sosyal bilgiler öğretmenliği öğrencilerinin fiziki coğrafya konularındaki bazı temel kavramları anlama düzeyi ve kavram yanılgıları. [Prospective social science teachers'level of understanding and misconception on physıcal geography and some fundamentel concept]. Akademik Bakış Dergisi, (20), 1-14. Doi: https://doi.org/10.53487/ataunisosbil.1013861

Güneş, H. (2015). Eğitim bilimleri terimleri sözlüğü. [Dictionary of educational terms] Ankara: Ütopya Yayınları.

İnci, T. (2019). Bağlam temelli öğrenme ortamı algısı, derse ilgi, derse katılım ve akademik güdülenme etkileşiminin ortaokul öğrencilerinin fen bilimleri başarısına etkisi (Doktora Tezi). [The effect of context-based learning environment perception, interest, classroom engagement and academic motivation interaction on secondary school student's science achievement]. (Doctoral Thesis). Eskişehir Osmangazi Üniversitesi, Eğitim Bilimleri Enstitüsü. doi: https://doi.org/10.35675/befdergi.910531

Karakuş, U., & Karaman, B. (2019). Sosyal bilgiler dersinde coğrafya konularının öğretimine ilişkin öğretmen görüşleri. [Teachers' views on teaching geography subjects in social studies course] II. Uluslararası Coğrafya Eğitimi Kongresi Bildiriler Kitabı (UCEK-2019) 3-5 Ekim 2019 , (s. 159-166). Eskişehir Osmangazi Üniversitesi. Doi: https://doi.org/10.33206/mjss.537718

Kayacan, Z. (2010). İlköğretim altıncı sınıf öğrencilerinin coğrafi koordinatlarla ilgili kavram yanılgıları (Yüksek Lisans Tezi). [The sixth grade students' understanding levels and misconceptions about geographic coordinates] (Master's Thesis). Balıkesir Üniversitesi, Sosyal Bilimler Enstitüsü.

Kaymakcı, S., & Akbaba, B. (2014). Sosyal bilgiler öğretmen adaylarının geçmiş yaşantılarında öğrenemedikleri konular ve bunlara ilişkin çözüm önerileri. [Prospective social studies teachers' problems and suggestions about the subjects which are unable to learn in their previous lives]. Türkiye Sosyal Araştırmalar Dergisi,183 (183), 145-165. Doi: https://doi.org/10.33418/ataunikkefd.907315

Kocalar A. O. & Demirkaya, H. (2015). Coğrafya öğrenmek niçin önemlidir? Lise öğrencilerinin algilari. *Doğu Coğrafya Dergisi, 19*, 123-144.

Kocalar, A. O. & Demirkaya, H. (2017). Geography teachers' views on effective geography teaching. *Review of International Geographical Education Online, 7*, 332-346.

Kösle, M. (2019). 9. Sınıf Öğrencilerine Yönelik Geliştirilen Eğlenceli Coğrafya Materyaline İlişkin Öğretmen Görüşleri (Yüksek Lisans Tezi). [Teachers' opinions about the fun geography material developed for 9th grade students] (Master's Thesis). Bursa Uludağ Üniversitesi, Eğitim Bilimleri Enstitüsü. doi: https://doi.org/10.21565/ozelegitimdergisi.578454

Kvale, S. (1996). Interviews: An ıntroduction to qualitative research interviewing. California: Sage Publication.

MoNE. (2005). Coğrafya dersi öğretim programı. [Geography course curriculum] Ankara: Milli Eğitim Bakanlığı Talim Terbiye Kurulu Başkanlığı.

MoNE. (2018). Ortaöğretim Coğrafya Dersi Öğretim Programı. [Secondary Geography course curriculum] Milli Eğitim Bakanlığı Talim Terbiye Kurulu Başkanlığı: http://mufredat.meb.gov.tr/ProgramDetay.aspx?PID=336 adresinden 05.03.2022 tarihinde edinilmiştir.

Miles, M. B., & Huberman, A. M. (1994). Qualitative Data Analysis. Thousand Oaks: CA: Sage Publications. .

Öncül, R. (2000). Eğitim ve eğitim bilimleri sözlüğü. [Dictionary of education and educational sciences] İstanbul: Milli Eğitim Bakanlığı Yayınları. Doi: https://doi.org/10.29329/ijiape.2022.437.6

Özünal, S. (2010). 9.sınıf ögrencilerinin dünyanın sekli ve hareketleri konusundaki temel kavramları ögrenme düzeylerinin bilgisayar destekli ögretim teknikleri kullanarak tespit edilmesi (Yüksek Lisans Tezi). [Identifying learning levels of the 9th grade students via computer-aided teaching techniques on the theme "the shape and movements of the earth''] (Master's Thesis) Kütahya: Dumlupınar Üniversitesi, Sosyal Bilimler Enstitüsü.doi: https://doi.org/10.9775/kausbed.2016.036

Sözcü, U., & Aydınözü, D. (2019). 9. Sınıf coğrafya dersi öğretim programı kazanımlarının Yenilenmiş Bloom Taksonomisine göre analizi. [The analyze of the 9th grade acquisitions geography course curriculum with respect to revised bloom taxonomy]. Doğu Coğrafya Dergisi 24 (42), 1-15. Doi: https://doi.org/10.17295/ataunidcd.635053

Şahin, V., & İnce, Z. (2020). 2018 Yılı ilköğretim öğretim programlarında coğrafya eğitimi. [Geography education in 2018 primary school instruction schedule]. International Journal of Geography and Geography Education (IGGE), (41), 1-12. Doi: https://doi.org/10.32003/igge.622193

Şeyihoğlu, A., & Taşkın, H. (2018). Coğrafya öğretmenlerine göre "dünyanın şekli ve hareketleri" kazanımında yaşanan öğrenme güçlükleri, sebepleri ve başa çıkma stratejileri. [Learning difficulties, causes and coping strategies in acquisition of "the

shape and movements of the earth" according to geography teachers] International Geography Education Symposium (IGES 2018) Proceeding Book, (p. 160). Nevşehir: Hacı Bektaş Veli Üniversitesi. Doi: https://doi.org/10.21325/jotags.2020.703

Taçyıldız, Y. (2020). Sosyal Bilgiler Dersinde Coğrafya Öğretimi: Öğretmen Görüşlerinin Değerlendirilmesi (Yüksek Lisans Tezi). [Geography education in social studies course: Evaluation of teachers' opinions] (Master's Thesis).Sivas Cumhuriyet Üniversitesi, Eğitim Bilimleri Enstitüsü. doi: https://doi.org/10.17556/erziefd.1000610

Ünlü, M. (2014). Coğrafya öğretimi. [Geography teaching]. Ankara: Pegem Akademi.

Yeşilyurt, E. (2019). Eğitim fakültesi lisans programları ders öğrenme çıktılarının kazanımını etkileyen değişkenlerin etkisi ve nedenleri. [The efficacy and reasons of factors affecting attainments of learning outcomes of undergraduate programs in faculty of education] Uluslararası Sosyal Araştırmalar Dergisi 12(63), 904-925 Doi: http://dx.doi.org/10.17719/jisr.2019-3286 .

Yıldırım, A., & Şimşek, H. (2013). Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in the social sciences] (9th Ed.). Ankara: Seçkin Yayıncılık.

Yin, R. K. (2003). Case study research design and methods (3rd Ed.). London, England: Sage.

Zaman, S., & Coşkun, Ö. (2007). Ortaöğretim öğrencilerinin coğrafya derslerine karşı tutumları üzerine bir araştırma: Erzurum örneği. [A Research on the attitudes of the high school students towards the geography courses: Erzurum sample]. Doğu Coğrafya Dergisi, 12(17), 17-31. Doi: https://doi.org/10.17295/dcd.72508