

## **Students' Views on the Use of Technology in Geography Course**

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**Abstract**—Use of technology in education enables students to be motivated and eager to participate in the lesson and is also a more effective tool in increasing motivation, encouraging students to the lesson and understanding the subject. The aim of this study is to determine the views of secondary school students on the use of technology in geography lessons. Qualitative research method was used in this study. Semi-structured interviews were carried out with 32 students who took geography lessons in Kazakhstan during the 2018-2019 academic year. The semi-structured interview form developed within the scope of this research was used as a data collection tool. Results of the study showed that secondary school students found technology effective and funny to use in geography lessons. Projections, computers, tablets and smart phones were specified by the students as useful technological tools for teaching geography. Results of the study were discussed with relevant literature and important implications for further research and practices were presented.

**Keywords**—Geography education, technology, students

### **1 Introduction**

Geography science offers great services and facilities to human beings in the 21st century with its modern methods and tools. The knowledge required to solve the problems encountered and to benefit from all the systems of the earth in a sustainable way is developed based on the science of geography [13]. It is essential to know and understand geographical knowledge for conducting both social life and government

affairs. Individuals, professionals or government administrators need geographical knowledge in order to fully understand what is happening in their close and distant environments. The subject of geography, which regards creating geographical awareness in individuals as an important goal, is composed of many things that we see with our eyes and come to mind. Raising the awareness of individuals who are sensitive to social problems, who can transform the data they receive into information, have problem solving skills, have acquired various geographic skills and have a developed awareness of savings can be considered among the most important goals. In this context, the science of geography does not consider space only as a field to be studied, but sees space as a living organism with its visible and invisible features and tries to understand, use, shape and manage it in this way. For this reason, geography teacher training programs have an important role in terms of gaining essential knowledge and skills for raising students with necessary geographical perspective [5,18,31].

Technological tools have begun to be used frequently in education because of their flexibility and accessibility [23]. Today, with the popularity of technology-supported teaching environments in line with the interests and needs of learners, teachers' competencies and self-confidence in technology and technology-supported teaching have become one of the focus areas for the successful integration of technology into teaching [4, 22]. Students live with technology from a very young age. Thanks to their curiosity, children are very eager to learn and to do research at an early age. For this reason, teachers should satisfy their curiosity and create interactive learning environments through technology. Considering that teacher has an important place among the factors that shape the learning-teaching process; it can be said that the quality of teachers is determinant in students' learning rather than the hardware characteristics of the schools [24, 30].

Technology is among the most important components of the formation of the information age in the 21st century [28]. The use of technology in learning environments provides students with richer learning situations, arouses interest, puts the student in the centre and increases their motivation towards lessons. Considering all these, it has become inevitable to benefit from technology in education. Many countries now make serious investments to benefit from technology in education. In order for these investments to achieve their purpose, applications and researches that will enable teacher candidates and teachers to develop effective technology integration knowledge in their fields should be conducted. Because no matter how much technology develops, it is clear that technology use in education cannot increase success unless effective use of teachers is provided [7,8,9].

Raising individuals who can keep up with society adapt to the features of the age we live is very important. Technology is the basic building block that enables the formation and shaping of the information age [25]. Nowadays, what a good teacher is looking for is not only having field knowledge but also being able to transfer his knowledge to his students by using technology. For this reason, the most important role in the use of technology in schools falls to the teachers who will choose the most suitable material for students and use the material they have chosen effectively. The knowledge that teachers should have is discussed in three categories: subject matter knowledge, curriculum knowledge and pedagogical content knowledge. However,

researchers have added technological pedagogical content knowledge to this information with the effect of technological developments mentioned in recent years [10, 11, 21].

Geography lesson is very convenient for using technology in terms of its contents, aims and achievements [29]. It can be said that using various technological tools in geography lesson will help learning with a permanent mark and increase attention and motivation. In this context, with the use of technology by geography teachers in education, a more efficient learning environment can be created, and the boring and memorizing aspects of the lessons can be avoided a little. However, the most important issue that teachers should pay attention to is that they know how to use technology in the education process and how to present it to students at a level that they can understand [6]. Now, as in many fields, the materials used in geography education for teachers and students and the unique learning opportunities offered by these materials have brought a different dimension to learning. In the developing and changing world, the place and importance of teaching tools and equipment is an undeniable fact in the efforts of our teachers to use the learning environments effectively and raise the individuals of the 21st century [1, 2, 34].

The use of technology in the classroom has been increasing in the recent years [3], [19]. In particular, tablets, computers, smart phones and the Internet are primarily used as technological tools in teaching and learning environments [26]. Successful adaptation of technological innovations to the teaching-learning process depends on the adoption of these technologies by teachers and students. Looking at the applications in many countries today, it is seen that the computer, LCD projector and the Internet are the basic technologies in the classrooms where modern teaching techniques are used [27]. Compared to other disciplines, these technologies are needed more in the teaching of geography, which is the subject of researching all aspects of the world we live in. The use of these technologies is an alternative source for teachers to develop course materials, activities and methods, and for students, it is an invaluable tool to better understand the world they live in with geography. Therefore, this study aims to determine the views of students on the use of technology in geography course. Technology has an important place in education, and this study is considered to be important as it will give an idea about the measures to be taken to increase the competence of teachers and students in using technology.

The use of technology in education, while motivating and motivating students to participate in the lesson, is a more effective tool in increasing motivation, encouraging students to the lesson and understanding the subject. The aim of this study is to determine middle school students' views on the use of technology in geography lessons. Qualitative research method was used in this study.

## **2 Method**

### **2.1 Research model**

A case study design, a qualitative research method, which allows an in-depth study of a situation, was used. Qualitative research is described as using observation, interview and document analysis etc. to obtain information. It includes a process in which techniques are used and followed to determine perceptions and events in their natural environment in a realistic and holistic manner. It is stated that qualitative research methods should be used in order to determine more accurately social phenomena, change and mobility that quantitative techniques fail to explain. Qualitative research techniques attach importance to taking into account the situation in which events and phenomena that make it possible to explain more than measurement [36].

Semi-structured interviews are frequently preferred by researchers because of their standard and flexibility, eliminating the limitations in writing and filling-out tests and questionnaires, and helping to gain in-depth information on a particular subject. Semi-structured interviews are neither as rigid as fully structured discussions, nor as flexible as unstructured interviews, they are between the two ends. Semi-structured interview technique was used because it provides this flexibility to researchers [20].

### **2.2 Study group**

Interviews were carried out with 32 students who took geography lessons in a secondary school in Kazakhstan during the 2018-2019 academic year. Study group included 6th grade students 16 of whom were girls, and 16 boys. Participation to the study was on a voluntary basis. The sample of the study was formed by random sampling.

### **2.3 Data collection tool**

The semi-structured interview form developed by the researchers within the scope of this research was used as a data collection tool. A semi-structured interview form consisting of 3 items was prepared to obtain students' views on the use of technology in geography course. For the validity of the questions, expert opinion was received from 5 experts from the relative fields.

1. How do you find technology supported education? What effects does it have on your learning?
2. Which technological devices do you prefer in geography course?
3. How technology can be used to increase motivation in geography lessons?

## 2.4 Data analysis

Interviews were conducted through face-to-face interviews with students. For the purpose of the research, 25-30-minute interviews were held, although the interview times varied. All of the responses were recorded with a voice recorder after explaining the aim of the study. Students were also informed that data obtained from the study would be only used for scientific purposes. The recorded data was then converted into a written document in computer environment. In the analysis of the data, the findings of the research were presented in the tables using frequency and percentages. Students’ views on the use of technology in geography lessons were analysed through content analysis. Qualitative research data were analysed in four stages: coding of data (coding made according to previously determined concepts, coding made according to concepts extracted from data, coding made in a general framework), finding themes, organizing and defining data according to codes and themes, and interpreting the findings.

## 3 Results

### 3.1 Results on secondary school students’ views on the effects of using technology in education

**Table 1.** Views on the effects of using technology in education

Category	f
Makes it easier to understand	30
Making it fun	2

Table 1 shows the results on secondary school students’ views on the effects of using technology in education. The majority of students stated that technology facilitates understanding. Only 2 students mentioned about technology as funny.

Sample responses from students were provided below:

*“I can understand more easily when our teachers use technology in geography lessons. Other times the lessons are boring.” (S7)*

*“Geography is more fun when it comes to technology.” (S21)*

*“I want technology to be used because our interest increases more, we can focus on the lessons, there will be more enthusiasm. We can understand better.” (S27)*

### 3.2 Results on secondary school students’ views on the technological devices they prefer in geography course

**Table 2.** Technological devices preferred by the students in geography course

Category	f
Projection	26
Smart board	8
Computer	6
Smart phone	6
Tablet	3

Results on technological devices preferred by the students in geography course were provided in Table 2. According to the results, majority of the students reported that they preferred projections to use in geography lessons. Secondary school students mentioned about five different technological devices they preferred using geography lessons. Smart board, computer, smart phone and tablets were other technological devices stated by the students participated in the study.

Sample statements from students were provided as follows:

*“Our teachers frequently use projections in lessons and I think it is useful.” (S5)*

*“Computers are everywhere and it makes geography lessons more interesting.” (S10)*

### 3.3 Results on secondary school students’ views on how technology can be used to increase motivation in geography lessons

**Table 3.** Views on how technology can be used to increase motivation in geography lessons

Category	f
Visual presentations	12
Mobile applications	10
Computer games	6

Table 3 demonstrates the results on secondary school students’ views on how technology can be used to increase motivation in geography lessons. According to the results, secondary school students thought that visual presentations, mobile applications and computer games could be used as technological devices in geography lessons in order to increase motivation.

Sample statements from students’ responses were provided as follows:

*“I think if our teachers prepare visual presentations, for example to show mountains or some natural events, I would like to learn more.” (S30)*

*“I like playing computer games and topics become more interesting.” (S2)*

*“Applications in smart phones can be used.” (S21)*

## **4 Discussion and Conclusion**

It is an indisputable fact that the effects of technology-supported teaching are really important to facilitate students' learning in various subjects. In line with this situation, this study aimed to reveal secondary students' views on the use technology in geography lessons. According to the results, students indicated that they learn geographical subjects better when they learn with technological tools. In addition, students also mentioned about the use of tablets, computers, projection devices and smart boards as useful technological tools for learning geography. Therefore, it can be determined that increasing technologically supported teaching in geography lessons facilitates learning of the subjects. The results also revealed that 2 students found technologically supported education fun and concluded that technology could facilitate learning by doing fun game applications in geography lessons. In parallel with these results of the present study, [17] discussed new trends in geography teaching and demonstrated the success of technology-supported education in geography. [34] also in his investigated the use of computers in geography lesson and found that the use of computer-aided training should be increased in teaching geography.

Furthermore, secondary school students mentioned five different technological devices they preferred using during geography lessons. Smart board, computer, smart phone and tablets were other technological devices stated by the students participated in the study. Besides, secondary school students thought that visual presentations, mobile applications and computer games could be used as technological devices in geography lessons in order to increase motivation. Secondary school students stated that geography lessons were effective when smart boards were used; so, teachers should increase the use of smart boards. On the other hand, students also emphasized the fact that mobile applications make learning effective. Number of computers, smart boards etc. should be increased in classrooms in order to enable the use of these technological tools in teaching geography to facilitate learning. Students expect their teachers to provide more technology supported education in geography lessons. Several studies reached similar results in the literature [12,14,15,32,33,37]. In accordance with these results, Kaya & Aydin [16] examined the effect of the use of smart board on student success in geography lesson and found that it is very effective in students' success and the use of smart boards increased motivation of students.

This study revealed important implications for further research and practices. Based on the results of the study, following recommendations were suggested:

- The views of students at different education levels towards the use of technology in geography lessons can be examined.
- In this study, it was concluded that students' views on the use of technology applications in education were positive. Technological materials can be developed for use in geography lessons to increase students' achievement and motivation.
- Seminars, in-service trainings and conferences can be organized for geography teachers to gain necessary knowledge and skills to be able to integrate technology in geography lessons to increase learning.

- Geography teacher training programs should include more lectures on technology to raise geography teachers who are qualified in using technology in teaching geography.
- Quantitative and experimental studies can be carried out in order to provide empirical results for the effectiveness of using technological tools in teaching geography.

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