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The impact of smart board usage on class management

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Abstract

Recent technological developments have made access to information easy. Today, countries are giving shape to their educational policies by including information technologies in their education systems. One of the information technologies that are in wide use is smart boards. This research aims to determine the positive and negative impacts of smart board usage on class management. The difficulties teachers experience in class management, skills of teachers in terms of ensuring motivation in the class, their levels of using technologies, abilities to use computer and computer programs, and attitudes towards preparing and benefiting e-content are all taken into consideration. Based on the research findings, we concluded that smart board usage has a positive impact on in-class communication and makes the courses fun and entertaining. The students are said to be more careful and concentrated, and this makes it easier for teachers to manage the classroom while positively affecting time management.

Keywords: Teachers, smart board, classroom management, technology, productivity.

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1. Introduction

Human beings have been developing and making progress since their first appearance in the world. These developments have been in every field, just like in technology. Through penetrating into daily life, technology has provided productivity and convenience in all fields. Humans have been able to accomplish easily any work they could not do by men power with these technologies. Also, humankind has managed to achieve such a technology – computers – at the end of the 20th century that represented brain power instead of men power, for the first time in history. Thanks to computer technology, humankind has increased its calculation speed and succeeded to store information more than a human memory could manage and use them when required (Yilmazel, 2013). In the wake of these developments, all sectors have felt the need to adapt themselves to these very information technologies and renovate and improve their systems and methods. Educational institutions have not been any exceptions. They tried hard to utilise these information technologies in education and the training process. As a result of this, educational technology has entered into the education field as a branch of science.

For educational technology, various definitions have been made but the one that was given by one of the international organizations, the Association for Educational Communications and Technology is the latest definition. It follows thus:

Educational science is a multi-disciplinary field with unique characteristics fed by computer sciences, systems theory, cognitive sciences, psychology, sociology and other branches. Even though it mainly falls under the sociology paradigm it has correlations with natural sciences. It intercepts with natural sciences in the context of research methods as well as information applications (https://tr.wikipedia.org).

Educational technologies have made almost unimaginable progress. When we investigate periods shaped by the historical development stages, we see that unique aspects have changed both the qualifications and quantifications of educational technologies. We can mention here old technologies like pencil, paper and printing press as an example for educational technologies. In this day and age however, education technology has made a significant progress (https://tr.wikipedia.org).

Nowadays, the most important reason to use educational technology is considered to be keeping the interests and stimulating the senses of men. Men remember 10% of what they read, 20% of what they hear, 30% of what they see, 50% of what they see and hear, 70% of what they say and 90% of what they do and say (Dastan, 2006). According to this research, each technology used in education has different impacts on our sense organs. We see that there is a significant difference in remembering and learning what we read and say. We may claim that educational technology can be used for learning and is best attained if this research is taken into account. For it to happen, of course, educational environment and methods need to be enriched with technology (Tate, 2002; http://downloads01.smarttech.com).

In order to realise a non-problematic and permanent learning, using educational technology in educational systems has become compulsory. While a part of these technologies has a visual effect, others appeal to the senses (Table 1; Eroldogan, 2007).

Table 1. Characteristics of instructional technologies

Instrument type	Visual	Sound	Motion	Interaction	Touch
Actual objects and materials	❖				
Written materials	❖				
Visuals (photos, pictures, drawings, graphics, etc.)	❖				
Display boards (chalks, bulletin, multi-purpose)	❖				
Overhead transparencies	❖				
Slide and film strip	❖	❖			

Audio material (tape, Cd)	❖	❖			
Video and film	❖	❖	❖		
Television	❖	❖	❖		
Computer software	❖	❖	❖	❖	
Multimedia	❖	❖	❖	❖	
Smart board	❖	❖	❖	❖	❖

With developments in technology, more advanced educational technologies like smart board and tablet computer have replaced instruments such as visuals, tapes and overhead projectors that were once used in the education training process. The smart board is a presenter that can be controlled with touch and used with a computer and overhead projector together (Shenton & Pagett, 2007). As an educational device, the smart board is an educational technology that enables to move or fix a computer and overhead projector and convey the materials of teachers in a multifunctional way via a special software by which rich materials can be introduced with Internet support (Brezinova, 2009).

England started to use the smart board in schools for the first time in the 1990s (Beeland, 2002). It is known that smart board was being used in almost all primary and secondary schools in England in the year 2007 (Balkas & Baris, 2015). Turkey, however, has started to use smart board in all pre-, primary and secondary schools under a campaign called Fatih Project (Movement of Enhancing Opportunities and Improving Technology) in 2012. Based on this application, the Turkish Republic of Northern Cyprus seeks to start using smart boards.

The smart board is known to have positive effects on the class management and student motivation, according to several researches (Bilici, 2011; Yildizhan, 2013). So, the educational technology and the attitudes and opinions of teachers working under the TRNC Ministry of National Education who would use this technology with regard to class management are important for us. In this respect, the perspective of teachers considering the smart board usage in the process of education and training are investigated. Based on this purpose, we looked for an answer to the question of 'What is the impact of smart board usage on the student motivation and class management?'

2. Method

2.1. The research model

In this study, a type of qualitative research method, interviews with relevant participants, is preferred. In social sciences, qualitative research utilises an inductive approach, emphasises the descriptive data collecting technique and the perspective of research subjects in their natural settings (Bogdan & Biklen, 2006). This research benefited from the open-ended question technique which is one of the qualitative data collecting methods.

3. Participants

For the study group of this research, first a high school was elected among other high schools located in Lefkosa in the education and training year 2015–2016 and then 25 teachers were chosen from that selected high school. A qualitative research was made with these teachers using personal interview reports. The teachers are the ones who use smart boards effectively (f = 25). In ensuring the teachers' participation, the voluntary participation principle was applied. The branches and service years of the participant teachers are given in Table 2.

Table 2. Branches and service years of teachers

	Branches and service years of teachers	f	%
Branches	Vocational courses	6	24
	Foreign language	4	16
	Literature and Turkish	4	16
	Geography and history	3	12
	Information technologies	3	12
	Physics and chemistry	3	12
	Mathematics	2	8
Service Years	1–10	7	28
	10–20	14	56
	20 and over	4	16
Total		25	100

When we look at the branch information of the participants, we see that 24% (*f* = 6) teaches vocational courses, 16% (*f* = 4) foreign language, 16% (*f* = 4) literature and Turkish, 12% (*f* = 3) geography and history, 12% (*f* = 3) information technologies, 12% (*f* = 3) physics and chemistry and 8% (*f* = 2) mathematics. When it comes to the service years of research participants, we see that 28% (*f* = 7) performs a service for 1–10 years, 56% (*f* = 14) for 10–20 years and 16% (*f* = 4) for 20 – over.

During the preparation of interview reports, the relevant literature was reviewed and semi-structured interview forms were created in accordance with the main and sub-goals of the research. After receiving the required permissions from the Ministry of National Education, we started the interviews.

4. Data Collecting Instrument

The data collection process of the research was commenced after creation of the open-ended questions. These questions were reviewed in accordance with the views of an expert. The general content of these questions pertains to the positive and negative effects of smart board use in classrooms with respect to the class management and student motivation.

After that the teachers who use smart boards were found and a pre-interview was made with each of them along with the necessary explanations. Then, the form containing four questions was given to them. A few days later, the forms were retrieved. In this process, no intervention had been made on the participants.

5. Data Analysis

When it comes to analysing the answers of the participants, descriptive analysis which is one of the data analysis methods of qualitative research was used (Yildirim & Simsek, 2005). Then, relevant codes were created by reviewing the answers of the participants. During that process, it was found that some teachers had not given any answers to certain questions while some others had written more than one answers to the same question. Hence, the total number of teachers whose views are depicted in the graphics and tables may be less or more than the number of the participants. Codes were created by the three researchers and then these researchers came together and checked the codes against each other. And then, they put last touches on the analysis. Depending on the gathered data, graphics and tables were formed. In order to reflect the perspectives and views of the participants, quotations were used. Teachers were coded with the letter 'O' and numbers (O1, O2, ...).

6. Findings

The findings gathered in this section are given under the themes based on the answers to the questions with quotations from teachers' views. Analyses are made accordingly.

Teachers' views on preliminary preparation to teach a lesson on a smart board.

Table 3 shows the results for the question the teachers are asked about how they prepare themselves to use smart board before the lessons and which documents they benefit from.

Table 3. Teachers' views on preliminary preparation to teach a lesson on a smart board

Views	*f*	%
I do preliminary work (web sites, EBA, my own documents, etc.)	22	88
I do not do preliminary work	3	12

Apart from a few, all the teachers stated that preliminary work is necessary in order to have more efficient lessons and to ensure class management.

Some teachers' views on preliminary preparation to teach a lesson on a smart board are given below.

I benefit from relevant written and visual elements (film-video-slide) at home (O 20).

I download slides, poems, educational games from the sites providing materials in accordance with the units and subjects of the lesson I teach and then I use them in the class to a certain degree. (O2).

Teachers' views on what attracts the students' attention on the smart board.

We asked the teachers what the attractive teaching materials were, related to the use of smart board. We presented considering views in Table 4.

Table 4. Teachers' views on what attracts students' attention to the smart board

Views	*F*	%
Audio visuals (short films, clips, animations, audio and moving graphics, pictures and puzzles, etc.)	17	68
The student's wish to process on the smart board	3	12
visuals (figures, pictures, puzzles, textbooks, etc.)	3	12
Audio elements (music, sound recordings, puzzles, etc.)	2	8

Here are some of the teachers' views on what attracts the student's attention to a smart board:

In science lessons, the course subjects are not completely understood without shapes. These courses should be supported with shapes, pictures and animations. This way, the student visualizes what is told in the course and learning gets easier and increases the curiosity towards lessons. Thus, the student listens to his/her lesson in a much more careful way (O15).

The student's allowance to use the board increases his/her curiosity (O3).

Showing the shapes and important points with different colors, short films, etc. intensifies the interest (O9).

According to the findings, 12% of teachers stated that visuals like shape, picture, puzzle and textbook pull the attention of students. 8% of the teachers who expressed their opinions told that

audio elements such as music, sound recordings and puzzles attract the attention of students. 12% of the teachers' views also points that teachers pull the attention of students by using the smart board. 68% of teachers' views indicated that both audio and visual elements arouse student interest in the lessons.

The teachers' views on positive and negative impacts of smart board use on the class management.

We asked teachers' opinions about the positive or negative effects of smart board use on the education and training process. We presented the results in Table 5.

Table 5. The teachers' views on positive and negative impacts of smart board use on the class management

	f	%
Positive opinions		
Smart board use ensures long-lasting motivation of students.	23	92
Smart board use increases the rates of student participation in the classrooms and students' following the lessons.	20	80
Smart board use provides convenience for teachers in managing time.	7	28
Negative opinions		
Technical failures distract student concentration.	6	24
Motivation diminishes in time if smart board is not used effectively.	4	16
Teacher's standing by the board diminishes the ability to manage class.	3	12

When Table 5 is analysed, we see that several positive opinions about smart board usage have been expressed. As a matter of fact, we have indicated the ones that are widely given in Table 5. Based on these findings, we concluded as stated below:

92% of positive opinions demonstrate that smart board use keeps student motivation alive for a long time. 80% of teachers said that smart board use increases the rates of student participation in the classrooms and students' following the lessons. And 28% of teachers said that they could use the time better when they utilised the smart board.

On the other hand, 28% of teachers who expressed the negative effects of smart board use in class management stated the reason as technical failures. Also, 16% of teachers pointed to the fact that the motivation of students is lost when they follow the textbook on the smart board or watch long animations and films. Lastly, 12% of the teachers said the teacher's ability to manage the class diminishes when the teacher stands by the board.

Some of the teachers' views on the positive and negative impacts of smart board use in class management are given in the following:

Attracting the student's attention, ensuring his/her motivation and not getting them bored may contribute to the in-class discipline. On the other hand, teacher being engaged with the board all the time, not making any eye contact with the students might have a negative effect on the class discipline. So, the teacher needs to make the smart board a part of the lesson he/she gives (**O14).**

Smart board, when used in a controlled manner and with convenient materials for the student's long term concentration, have mostly a positive effect on the class discipline (O 19).

Technical failures related with the smart board cause students to stop following the lesson, hence disrupt the class discipline. (O5).

7. Conclusion

The effects of smart board use on the teacher's preliminary preparation, student attention and class management were investigated in this research. Teachers who participated in the survey we prepared emphasise that preliminary preparation is inevitable if the smart board is to be used effectively. Each teacher of all courses states that they can easily access to the relevant materials. They add that nowadays, all kinds of materials related with all courses can easily be found on web sites. So, what is needed to be done is to do the preliminary work. We conclude that if teachers do not make any preliminary preparation or enough preparation, then the smart board use does not yield the expected results.

Another issue that was addressed in this research was the question: 'What attracts the students' attention on the smart board?' Teachers replied that students are much more interested and willing in the classroom and follow the courses with more care and interest as the smart board appeals to more than one sense. They also added that the smart board increases the student participation in the courses and helps to objectify the abstract concepts, thus affecting the student's motivation in a positive way. However, some expressed that disruptions caused by technical failures influence the student's motivation in a negative way.

The main target in this research was to determine the impacts of smart board use on the class management. Asking both about preliminary preparation and which materials attract attention was to identify the impacts of smart board use on the class management and find how it affected in-class interaction. Teachers stated that smart board use has a positive effect on in-class interaction and claimed that the lessons are much more fun and entertaining. According to these teachers, with the introduction of smart board use in the education and training process, students' interest and care in the school, in courses and in lessons increased. That very care and interest causes to diminish undesired behaviours in the classroom and facilitates class management. The ease in class management allows the teacher to spare his/her time for course-related activities instead of dealing with problems in class management. This also shows that smart board use has a positive impact on managing time.

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