



## Encountered in the Use of Smart Boards in Turkish Language Teaching (Sampling of Turkey)

Research Article

Abdulkadir KIRBAS<sup>1</sup>

<sup>1</sup>Ataturk University, Faculty of Education, Turkish Education Department, TURKEY, ORCID: 0000-0001-9846-0256

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### ABSTRACT

Based on other developments in technology in our country, a smart board, one of the greatest opportunities of instructional technologies for education and training, has been rapidly spreading in all levels of education, especially in secondary schools. When the literature is identified, it seems that studies have examined the attitude of the teachers or students about the smart boards and their effects on the academic achievement. However, it is also observed that the studies about the detection of problems related to smart boards have remained insufficient. With this conducted research, it is aimed to determine the problems faced by Turkish teachers who are the most important users of smart boards in their educational and teaching activities while teaching the Turkish language, as well as the problems encountered related with hardware, technical issues, software and course contents of the smart boards. In order to reveal the problems encountered in the use of smart boards within Turkish teaching process, the screening model has been used in this study, which is conducted to determine the views of the Turkish teachers about the use of smart boards while teaching Turkish. The sample group of the study consists of 670 Turkish teachers working in Ankara, Istanbul, Izmir, Gaziantep, Trabzon, Erzurum and Antalya during the academic year of 2018-2019. As a result of the research, based on the opinions of Turkish teachers, some problems were determined related to instructional activities and technical software besides the ones encountered in the use of smart boards while teaching Turkish, and then suggestions for solving these problems were submitted accordingly.

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#### Keywords:

Smart board applications, Turkish teachers, teaching of Turkish, encountered problems.

### Introduction

Technological developments facilitated the life of an individual and led to significant changes in his/her daily and social life. As it is case in every field of life, the rapid progress of technology has also led to radical

<sup>1</sup> Corresponding author's address: Atatürk Üniversitesi KKEF Eğitim Fakültesi Türkçe Eğitimi Bölümü  
Telephone: 0533 4941906  
Fax:  
e-mail: akadirkirbas@atauni.edu.tr  
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changes in the field of education with many new research and developments. These changes and developments have been reflected in the education process as well, and the tools used in traditional classes such as blackboards, overhead projectors and tape recorders have been replaced by smart boards, which are based on more advanced digital technologies. Today, one of the most important and effective tools that informative technologies offer to educational environment seems to be a smart board. A smart board or an interactive whiteboard is usually referred to a technological tool that works by linking with a computer and a projector via enabling an interactive use of those transferred from a computer onto a flat surface. Generally, some models of smart boards that can operate on a touch screen with a special pen and developed for the use of smart boards are electronically displayed on the screen, which can be used without the need of a computer or a projection device (Türel, 2011: 1896).

The UK has been ranked as one of the first users to apply technological innovations in the field of education. By allocating a budget of 50 million pounds between 2003 and 2005, it has become a model for other countries in the world with the use of smart boards in the classes of the UK (Gündoğdu, 2014: 393). In 2007, all of the primary schools in the UK and 98% of secondary schools were found to have a smart board system in a study (Lai 2010: 511). This great innovation in the field of education has attracted the attention of other countries, especially Europe, and increased the interest on a smart board technology. Taking into account the contribution of smart boards to education, many countries such as Australia, Italy and Mexico, have developed various projects and invested heavily in order to equip all classes with this technology (Lee, 2010; Smith and Other, 2005; Türel, 2011). To keep pace with this development, Turkey aimed to develop teachers' knowledge and skills in order to get the most from this technology at the end of 2010 within the scope of application called FATİH project "Movement of Enhancing Opportunities and Improving Technology " hoping to improve the use of information technology in the classrooms. With this project, it has been planned to equip the classes with smart board in primary and secondary schools, administered by the Directorate of National Education within three years (MEB) (Türel, 2012: 425).

There has been considerable progress in the use of educational technologies in schools in Turkey. Thus in Turkey; computer and ICT classes are available in almost all primary, secondary and high schools, and 96% of them have the internet access; 1500 of these schools have computer-aided private laboratories, and 18500 of them use authoring software programs. With the FATİH project, large budgets for education have been allocated in our country in three years, in 40 000 schools; more than 500 thousand classrooms have been equipped with 614 364 laptops and projectors as well as smart boards. (Kayaduman et al. 2011: 124). In this way, as in many developed countries, it has been aimed that smart boards' starting to take their place in educational institutions in Turkey will contribute positively to the learning-teaching process in general. Regarding the FATİH project, which has recently enabled the use of instructional technologies in schools, it is noteworthy that the use of smart boards in learning environments has become widespread; therefore teacher qualifications need to be reviewed accordingly. Considering the prevalent use of interactive boards along with the FATİH project in Turkey, the use of these devices is reflected as a basic ICT (Information and Communication Technologies) competence for a teacher. In today's learning environments, teachers are expected to use advanced technologies such as a projector device, a blackboard or a whiteboard and computer as well as advanced technologies such as smart boards in their classrooms effectively and efficiently (Akyüz et al. 2014: 2).

However, the suitability and sustainability of technological materials advancing and growing in line with the social needs are also determined by the users of the technology. The continuity of technological developments changing the life of the individual and the society vary according to the culture, development level, structure and time of the relevant society. In order for this fundamental change in society to be realized

in a desired level and direction, it is important to detect the application problems encountered and to take measures to solve such problems (Keser & Çetinkaya, 2014: 377).

When the literature on the field is scanned, one can observe that the opinions of teachers and students have frequently been referred in the studies to evaluate the use of smart boards in the classrooms. In this respect, it seems that the following issues regarding teachers have been frequently investigated within the conducted studies about the use of smart boards: opinions of teachers, use of smart boards in various learning environments, teachers' attitudes, their competences, their perceptions, their educational importance and their limitations. (Altınçelik, 2009; Ateş, 2010; Beauchamp, 2004; Bulut ve Koçoğlu, 2012; Elaziz, 2008; Erduran ve Tataroğlu, 2009; Kennewell, Tanner, Jones ve Beauchamp, 2008; Manny-Ikan, Tikochinski, Zorman ve Dagan, 2011; Quashie, 2009; Saltan, Arslan ve Gök, 2010; Tezer ve Deniz, 2009; Zevenbergen ve Lerman, 2008, Keser ve Çetinkaya, 2013). In the majority of the studies carried out on teachers, the results reveal that teachers have positive attitudes towards interactive boards and that this technology can contribute or provides with contributions to learning environments.

In the studies conducted for students, it is generally seen that the studies have been made about the following subjects: Students' views on smart board applications, use of interactive boards through learning, student attitudes, competences and perceptions, their impact on learning motivations, their importance for educational aspects (Akbaş ve Pektaş, 2011; Çelik ve Atak, 2012; Ekici, 2008; Kaya ve Aydın, 2011; Mathews-Aydınlı ve Elaziz, 2010; Morgan, 2008; Olgun, 2012; Somyürek, Atasoy ve Özdemir, 2009; Kırbaş, 2018a; Kırbaş, 2018b). In line with the studies conducted on the teachers besides the studies on the students; results show that students have positive attitudes towards interactive boards; these tools increase their motivation for learning, and contribute positively to active learning and classroom interaction. It is noteworthy that the problems encountered in the implementation of the smart boards in the classroom and relevant illuminating studies for such problems have not been fulfilled sufficiently. Above all, the problems faced by the teachers and students, who will use such technology in order to reach the desired targets, should be clarified; and suggestions must be given for the solution of these problems. Changes in educational practices also have necessitated changes in the qualifications required by teachers. The qualifications of the teachers who are the users of technological materials have been determined according to some basic standards of international criteria (ISTE, 2000; International Society for Technology in Education) as follows: "To be a technology literate; to be able benefit from technology in their courses; to be able to guide their students through the use of technology; to provide students with the skills to use information; to be able organize the learning environment in such a way that they can use technology, to be able to collaborate on the internet with their colleagues and to share their professional development and experiences.

### **Purpose and Importance of the Study**

Using technology in our age is measured by how it is consumed, not by the production, physical form, or widespread use of technological materials. In the 21st century, modern technology is developing so rapidly that the traces of technology can only be seen after the implementation. (Keegan, 1999; 5). One of the prerequisites of success in the training process, where technological materials are rapidly spreading, is to use instructional technologies effectively. Nowadays, developed countries, which aim to raise individuals who are effective in every field of their lives and those who have the desired skills, to have restructured and to be developed their educational programs in accordance with modern instructional technologies. For this reason, a teacher's opinion is one of the most commonly used sources in evaluating the use of smart boards in classroom environment (Kaya & Aydın; 2011: 181). In addition, increasing the technical standards related to the infrastructure in the use of technological tools will increase the success of the students involved in the process.

Large budgets have been allocated and put into practice within the teaching-learning process by means of FATİH Project in the revolutionary education system in Turkey in order to contribute substantially; each classroom has been equipped with smart boards and relevant tools. In order for this big project to be successful, it is important to make a good planning, to evaluate and analyze the process. For this reason, it is of great significance to determine the impact of new technological tools and equipments on the learning environment and the problems encountered during the application; to use the technology more effectively and to achieve the targeted success. Based on the opinions of the teachers who use the new technological materials in the learning process and who are at the center of this practice, it is necessary to determine the problems related to the process and then take steps to meet their expectations regarding these problems.

In the projects and studies carried out so far, the positive aspects of using computers and such technologies in education have been emphasized; however the negative and different aspects of this topic have not been examined thoroughly. Issues such as the shortcomings of computer-aided educational projects, the investigation of potential problems experienced by teachers and students have become necessary for the solution of application problems so as to reach the expected targets. (Ekici and Yılmaz, 2013: 387). For this reason, it is very important that teachers who use the new technology actively make use of their opinions about this issue. Thus, identifying the problems and needs of users who use smart boards while incorporating interactive boards into learning environment will provide important steps for effective use of this technology in the upcoming years. In this study, the Turkish teachers working in secondary schools in Turkey, the problems they face when using smart boards in their teaching Turkish are aimed to be determined via the opinions of the teachers and to provide solutions to these problems. Based on the views of teachers on the use of smart boards, within the scope of the research and for this purpose of the study, questions such as "What are the problems faced by teachers in smart board applications?" have been investigated accordingly.

## METHOD

Screening survey model has been used in this study, conducted in order to determine the problems encountered in smart board applications in Turkish language teaching, based on the opinions of teachers. This is a research technique that aims to explain the current or present state as it exists. Within the screening method, one who is involved in the research, tries to identify the subject of the research, the individual or the object in its own conditions and as it is. (Karasar, 2006; 77-79). Because of the large sample size of the study, this technique has been used to determine the current situation, as the "survey" is the most appropriate and most frequently used method for reaching a large number of people. (Kırbaç, 2018a; 1043).

### Population and Sample of the Research

The population of the study is made up of the Turkish teachers working in secondary schools in seven different regions of Turkey during the fall period of 2018-2019 academic year. The study group of the research consists of the teachers of Turkish (N = 670) working in Istanbul, Marmara Region; Ankara, Central Anatolia; Gaziantep Southeastern Anatolian Region; İzmir, Aegean Region; Antalya, Mediterranean Region; Trabzon, Black Sea Region and Erzurum, Eastern Anatolia Region. Each of the schools where the research is conducted has smart boards and the teachers of Turkish report that they use smart boards.

In order to determine the problems encountered in smart board applications in Turkish language teaching in line with the purpose of the study, firstly we have reviewed relevant data of literature in details. In addition, the faculty members at the Department of Computer and Instructional Technologies of the Faculty of Education of Atatürk University, Kazım Karabekir Faculty of Education; faculty members at the Department of Information; and Technology and Turkish teachers working in secondary schools were interviewed face to face, and we were informed about the problems they faced while using the smart boards; Problems encountered in these interviews were classified as two main titles "Problems encountered in the

activities of smart boards in education and training (in the course process); problems within the use of software and hardware of smart boards" with 23 items as "Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree" 5-point Likert-type, finally, a scale was developed named as "Problems Encountered in Smart Board Practices in Turkish Teaching". The validity and reliability procedure of the study was carried out on 240 teachers working in Erzurum, Erzincan, Kars, Bayburt and Gümüşhane and the Cronbach Alpha value of the scale was found as 0,82 at the end of the analysis; as a result of the KMO (Kaiser-Meyer-Olkin) test, the test statistic was found to be 0,647. Cronbach's alpha value of 0.82 indicates that the scale used in the study is acceptable (Ünal, 2015; 31). The data obtained in the research are shown as percentage and frequency values. The frequency analysis of the items used in the study was identified as quantitative, and the intensity and significance ranges of given items were determined accordingly (Tavşancıl and Aslan, 2001). By this way, qualitative data were digitized, the reliability of the data was increased, the bias was reduced and the comparison was made between the obtained data (Yıldırım & Şimşek, 2008, Keser & Çetinkaya, 2013).

## FINDINGS AND INTERPRETATIONS

In this section, the findings of the research and the interpretations of these findings are given in details.

**Table 1.** Percentage Values and Frequency Analysis Results on the Problems of Smart Board Applications during Turkish Teaching of Turkish Teachers

	Statements of Agreement Rates					Strongly Disagree
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
As students do not have to take notes in the Turkish course, which is taught with smart boards, students have problems using them in other subjects.	<i>n</i>	284	226	53	65	42
	<i>f</i>	42,3	33,7	7,9	9,7	6,2
The technical faults in the course of Turkish lessons, which are taught with smart boards, cause students to lose attention and reduce their interest in the lesson.	<i>n</i>	325	284	26	19	16
	<i>f</i>	48,5	42,3	3,8	2,8	2,3
While the assignments given to the students are evaluated on the smart board, the students are worried about the making mistakes.	<i>n</i>	216	179	102	93	80
	<i>f</i>	38,8	26,7	15,2	13,8	11,9
Students do not often listen to the lesson, because smart board applications give them the opportunity to watch / listen to the described topics later.	<i>n</i>	313	267	53	15	12
	<i>f</i>	46,7	39,8	7,9	2,2	1,7
Since each student's level of using computers and smart boards in the classroom is not the same, students have difficulty in using smart boards.	<i>n</i>	297	163	118	63	29
	<i>f</i>	44,3	24,3	17,6	9,4	4,3
Students feel uncomfortable in a dimly lit environment, which is realized to make the smart board more visible in the Turkish lesson, taught using the smart board.	<i>n</i>	291	224	98	33	24
	<i>f</i>	43,4	33,4	14,6	4,9	3,5
The tablet PCs given to the students to use with smart board and the smart boards make students' more addicted to technology.	<i>n</i>	316	269	53	20	12
	<i>f</i>	47,1	40,1	7,9	2,9	1,7

In the Turkish lesson, a student's desire to be sitting / being close to the smart blackboard causes a serious chaos in the classroom and thus disrupts the classroom seating order.	<i>n</i>	298	262	36	39	35
	<i>f</i>	44,4	39,1	5,3	5,8	5,2
Because each student does not use the smart board at the desired level, some students are worried about coming to the board.	<i>n</i>	228	209	112	75	46
	<i>f</i>	34,0	31,1	16,7	11,1	6,8
It's hard for me to use the smart board during the Turkish class.	<i>n</i>	259	234	66	83	28
	<i>f</i>	38,6	34,9	9,8	12,3	4,1
In the Turkish courses taught with a smart board, students do not improve their writing skills because they do not take notes.	<i>n</i>	276	218	43	89	44
	<i>f</i>	41,1	32,5	6,4	13,2	6,5
Turkish teachers have difficulty in preparing materials suitable for subjects to be covered on the smart board.	<i>n</i>	298	248	23	63	38
	<i>f</i>	44,4	37	34,3	9,4	5,6
In Turkish lessons, the interaction with the students is extremely low as the teacher stands firm in front of the board.	<i>n</i>	273	237	24	52	84
	<i>f</i>	40,7	35,3	3,5	7,7	12,5
Slow internet connection causes time loss in Turkish lessons.	<i>n</i>	324	289	9	28	20
	<i>f</i>	48,3	43,1	1,3	4,1	2,9
When the smart board is used in large classrooms, the problems of sound system reduce the students' interest in the lesson.	<i>n</i>	288	245	16	62	59
	<i>f</i>	42,9	36,5	2,3	9,2	8,8
I have difficulty in making eye contact with students while teaching the Turkish lessons.	<i>n</i>	293	221	22	71	72
	<i>f</i>	43,7	23,9	32,8	10,5	10,7
When you write with a pen on a smart board, the appearance of what is written late slows the flow of the lesson.	<i>n</i>	279	219	17	93	32
	<i>f</i>	41,6	32,6	2,5	13,8	4,7
I avoid using the smart board because I haven't got enough training on the use of a smart board.	<i>n</i>	281	249	25	69	46
	<i>f</i>	41,9	37,1	3,7	10,2	6,8
The lack of adequate visual and audio materials for the Turkish course in the smart board systems reduces the efficiency of the course.	<i>n</i>	328	286	15	23	18
	<i>f</i>	48,9	42,6	2,2	3,4	2,6
Students feel bored while watching/ listening to the video subjects on the EBA (Education IT Network).	<i>n</i>	268	221	18	88	75
	<i>f</i>	40	32,9	2,6	13,1	11,1
There are no rich course contents for basic language skills.	<i>n</i>	286	244	29	69	43
	<i>f</i>	42,6	36,4	4,3	10,2	6,4
Freezing, calibration, reflection, low image quality and screen shifts frequently interfere with the course.	<i>n</i>	240	208	13	95	114
	<i>f</i>	35,8	31	1,9	14,1	17

The problem arises because the screen image quality is not good in the visual elements (pictures, videos, etc.) included in the course content.	<i>n</i>	265	229	18	86	72
	<i>f</i>	39,5	34,1	2,6	12,8	1,07

When the table is examined, it seems that Turkish teachers who participated in the research gave negative feedbacks on the item *“As students do not have to take notes in the Turkish course, which is taught with smart boards, students have problems using them in other subjects.”* with *“I agree”* or *“I strongly agree”* ratio at a 66% of negative agreement level. Since students do not have to take notes while using smart board applications, they seem to have problems in holding pens and taking notes. It is observed that about 90% of teachers who participated in the research gave a negative answer to the statement *“As students do not have to take notes in the Turkish course, which is taught with smart boards, students have problems using them in other subjects.”* Six hundred teachers who participated in the study stated that the technical failures in smart boards caused a loss of attention during the Turkish course. One of the problems faced by the teachers regarding smart board applications is that the homework given to the students is said to have caused anxiety on the students. About three hundred and ninety-five teachers expressed that there were problems in the statement *“While the assignments given to the students are evaluated on the smart board, the students are worried about the mistakes made by the students.”* Approximately 86% of the Turkish teachers who participated in the study reported a high rate of negative opinion on the statement *“Students often do not listen to the lesson, because smart board applications give them the opportunity to watch / listen to the topics described later.”* This rate shows that a smart boards has a very significant impact on students thanks to the motivation of courses during the Turkish courses. %87 of participant Turkish teachers stated disagreements on *“Since each student’s level of using computers and smart boards in the classroom is not the same, students have difficulty in using smart boards.”*

The participant teachers pointed out that they were strongly agree or agree with the problems encountered in the use of smart boards while teaching Turkish in the following statements: 77% of them stated agreement on *“Students feel uncomfortable in a dimly lit environment, which is realized to make the smart board more visible in the Turkish lesson, taught using the smart board.”*; 87% agreed on *“The tablet PCs given to the students to use with smart board and smart boards make students more addicted to technology.”*; 85% on *“In the Turkish lesson, a student’s desire to be sitting / being close to the smart blackboard causes a serious chaos in the classroom and thus disrupts the classroom seating order.”*; 74% on *“It’s hard for the teacher to use the smart board in the Turkish class.”* another 74% agreed on the statement *“In the Turkish courses taught by smart board, students do not improve their writing skills because they do not take notes”*; 87% of them agreed on *“Turkish teachers have difficulty in preparing materials suitable for subjects to be covered on the smart board.”*; 86% on *“In Turkish lessons, the interaction with the students is extremely low as the teacher stands firm in front of the board.”*; 91% agreed on the statement *“Slow internet connection causes time loss in Turkish lessons.”*; 80% of them on *“When the smart board is used in large classrooms, the problems of sound system reduces the student’s interest in the lesson.”* ; another *“80% of them agreed on “I avoid using the smart board because I haven’t got enough training on the use of the smart board.”* 90% on *“The lack of adequate visual and audio materials for the Turkish course in the smart board systems reduces the efficiency of the course.”*; 89% of them stated their agreement on *“There are no rich course contents for basic language skills.”* and finally 75% of them agreed on the statement *“The problem arises because the screen image quality is not good in the visual elements (pictures, videos, etc.) included in the course content.”*

## CONCLUSION AND DISCUSSION

In order to improve the education and training in our country, FATİH project, which has been designed and implemented in accordance with the requirements and innovations of the modern age, to identify the problems of the teachers, located in the center of the smart board applications; to identify the problems encountered in the current application and to determine the problems encountered in the use of this tool, it is extremely important to bring about solutions. The outcome realized will be an important step in achieving the goal of the FATİH project. The problems faced by the Turkish teachers working in the secondary schools during the smart board applications were determined in the educational and training activities and thus the technical, hardware and software related problems were found on some sub-items and significant results were reached in the end.

#### ***Problems faced by Turkish teachers in the application of smart boards during educational and training activities:***

Turkish teachers who participated in the research expressed that they were strongly disagree or just disagree with the problems encountered in the use of smart boards during teaching Turkish in the following statements: *"The technical faults in the course of Turkish lessons which are taught with smart boards cause students to lose attention and reduce their interest in the lesson."* ; *"While the assignments given to the students are evaluated on the smart board, the students are worried about the mistakes made by the students."*; *"Students feel uncomfortable in a dimly lit environment, which is realized to make the smart board more visible in the Turkish lesson, taught using the smart board."*; *"Since each student's level of using computers and smart boards in the classroom is not the same, students have difficulty in using smart boards."* ; *"In the Turkish lesson, a student's desire to be sitting / being close to the smart blackboard causes a serious chaos in the classroom and thus disrupts the classroom seating order."* ; *"The tablet PCs given to the students to use with smart board and the smart boards make students more addicted to technology."* ; *"It's hard for the teacher to use the smart board in the Turkish class."* ; *"In the Turkish courses taught with a smart board, students do not improve their writing skills because they do not take notes."* These findings reveal that technology is not always sufficient to keep students' attention alive (Türel, 2011); and that teachers have a serious problem with course management when they teach with a smart board (Levy, 2002). Keser, Çetinkaya, 2013), negative attitudes of students may emerge towards such tools of technology; (Kayaduman et al., 2011).

#### **Problems of Turkish teachers regarding technical, hardware and software applications of smart board applications:**

Turkish teachers who participated in the research also came up with negative feedbacks by referring that they were strongly agree or just agree with the problems encountered in the use of smart boards in the following statements: *Slow internet connection caused time loss in Turkish lessons; When the smart board is used in large classrooms, The problems of sound system reduces the student's interest in the lesson; When the smart board is used in large classrooms, the problems of sound system reduce the student's interest in the lesson; The lack of adequate visual and audio materials for the Turkish course in the smart board systems reduces the efficiency of the course; There are no rich course contents for basic language skills; The problem arises because the screen image quality is not good in the visual elements (pictures, videos, etc.) included in the course content.* The high rate of negative responses they have given about the technical and hardware problems shows that there are important problems related to the use of smart boards among the majority of teachers participating in the research. These results of the research seem to be in line with some studies (Cüre & Özdener, 2008); (Hawkrige, 1983); (Smith et al., 2005); (Levy, 2002; Smith et al., 2005; Somyürek et al., 2009); (Türel, 2012); (Gülcü, 2014).

Based on the findings of the study, the following suggestions can be given to solve the problems faced by Turkish teachers.

\* A technical preliminary work should be carried out in order to achieve the desired targets stated within the FATİH Project.

\* Some of the investments made on smart board applications should also be reserved for teacher and student trainings for the efficient use of technological tools and equipment.

\* Smart board applications should be supported with different audiovisual materials including their own contents.

\* Students who cannot use the technology well in the courses taught with the smart board should be encouraged to use it.

\* Teachers should be more active in the courses that are taught with a smart board; and once necessary, the teacher should provide relevant communication with the student by stopping the lesson.

\* Almost all students should be given the chance of sitting close to the smart board in the large classrooms by creating a different seating order accordingly.

\* Funds should be allocated to the schools where smart boards are located in order to eliminate the technical and hardware problems.

\* Teachers of Turkish and Computer and Technology teachers should cooperate in groups closely.

\* Annual maintenance of smart boards should be provided.

\* Systematic and programmed, measurable digital screen literacy courses should be enabled for both students and teachers.

\* An effective communication network should be established with MEB (Ministry of National Education), which is the other stakeholder of the application, in order to solve all problems that may arise about the smart boards and to solve the problems immediately.

\* Studies on smart boards should be supported.

## REFERENCES

- Akbaş, O. ve Pektaş, H. (2011). The effects of using an interactive whiteboard on the academic achievement of university students. *Asia-Pacific Forum On Science Learning & Teaching*, 12(2), 1-19.
- Akyüz, H. İ., Pektaş, M., Kurnaz, M. A., Kabataş- Memiş, E. (2014). Akıllı Tahta Kullanımlı Mikro Öğretim Uygulamalarının Fen Bilgisi Öğretmen Adaylarının Tıpab'larına ve Akıllı Tahta Kullanıma Yönelik Algılarına Etkisi, *Cumhuriyet International Journal of Education*, 3 (1), 2014, pp. 1-14
- Altınçelik, B. (2009). *İlköğretim Düzeyinde Öğrenmede Kalıcılığı ve Motivasyonu Sağlaması Yönünden Akıllı Tahtaya İlişkin Öğretmen Görüşleri*. Yüksek Lisans Tezi. Sakarya: Sakarya Üniversitesi Sosyal Bilimleri Enstitüsü, Sakarya.
- Ateş, M. (2010). The using of active board at secondary school geography lessons. *Marmara Geographical Review*, 22, 409-427.
- Beauchamp, G. (2004). Teacher use of the interactive whiteboard in primary schools: Towards an effective transition framework. *Technology, Pedagogy and Education*, 13(3), 327-348.
- Bulut, İ. ve Koçoğlu, E. (2012). Sosyal bilgiler öğretmenlerinin akıllı tahta kullanımına ilişkin görüşleri (Diyarbakır ili örneği). *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi*, 19, 242-258.
- Cüre, F. ve Özden, N. (2008). Teachers' information and communication Technologies (ICT) using achievements & attitudes towards ICT. *Hacettepe University Journal of Education*, 34, 41-53.
- Çelik, S. ve Atak, H. (2012). Etkileşimli tahta tutum ölçeğinin geçerlik ve güvenirlik çalışması, *Anadolu Journal of Educational Sciences International*, 2(2), 43-60.
- Ekici, F. (2008). *Akıllı Tahta Kullanımının İlköğretim Öğrencilerinin Matematik Başarılarına Etkisi*. Yüksek Lisans Tezi. İstanbul: Marmara Üniversitesi Eğitim Bilimleri Enstitüsü,
- Ekici, S. ve Yılmaz, B. (2013). An Evaluation on FATİH Project, *Türk Kütüphaneciliği*, 27, 2, 317-339
- Elaziz, M. F. (2008). *Attitudes of students and teachers towards the use of Interactive whiteboards in EFL classrooms*. Yüksek Lisans Tezi. Ankara: Bilkent Üniversitesi.
- Erduran, A., & Tataroğlu, B. (2009) Comparison Of Science And Mathematics Teachers' Views Regarding Use Of Smart Board In Education. *9th International Educational Technology Conference 4-5-6 May 2009 Hacettepe University*. Proceedings Book 14-22.
- Gülcü, İ. (2014). *Etkileşimli Tahta Kullanımının Avantajları ve Dezavantajlarına Yönelik Öğretmen Görüşleri*, Akademik Bilişim'14 - XVI. Akademik Bilişim Konferansı Bildirileri 5 - 7 Şubat 2014 Mersin Üniversitesi
- Gündoğdu, T. (2014). Bir Öğretme-Öğrenme Aracı Olarak Akıllı Tahta, *Akademik Sosyal Araştırmalar Dergisi*, (2) 6, 392-401.
- Hawkridge, D. (1983). *New information technology in education*. Londra: Croom Helm.
- International Society for Technology in Education (ISTE). (2000). *National educational technology standards for teachers*. Eugene: ISTE Publications.
- Karasar, N., (2006). *Bilimsel araştırma yöntemi*, Nobel Yayın Dağıtım, Ankara.
- Kayaduman, H., Sırakaya, M. ve Seferoğlu, S. S. (2011). Eğitimde FATİH projesinin öğretmenlerin yeterlik durumları açısından incelenmesi. *XIII. Akademik Bilişim Konferansı (AB11)*, 2-4 Şubat 2011, İnönü Üniversitesi, Malatya.

- Kaya, H. ve Aydın, F. (2011). Students' views towards interactive white board applications in the teaching of geography themes in social knowledge lessons. *Zettschrift für die Wett der Türken-Journal of World of Turks*, 3(1), 179-189.
- Keegan, P (1999). Culture Quake. *Mother Jones*, 24(6), 9-42.
- Kennewell, S., Tanner, H., Jones, S. ve Beauchamp, G. (2008). Analysing the use of interactivetechonology to implement interactive teaching. *Journal of Computer Assisted Learning*, 34, 61-73.
- Kırbas, A. (2018a). Student Views on Using Smart Boards in Turkish Education, *Universal Journal of Educational Research*. 6(5): 1040-1049.
- Kırbas, A. (2018b). The Effect of Interactive Whiteboard Applications Supported by Visual Materials on Middle School Students' Listening Comprehension and Persistence of Learning, *Universal Journal of Educational Research* 6(11): 2552-2561.
- Levy, P. (2002). *Interactive whiteboards in learning and teaching in two sheffield schools: a develompmental study, sheffield*. Department of Information Studies, University of Sheffield.
- Manny-Ikan, E., Tikochinski, T., Zorman, R. ve Dagan, O. (2011). Using the Interactive White Board in Teaching and Learning - An Evaluation of the smart classroom Pilot Project. *Interdisciplinary Journal Of E-Learning & Learning Objects*, 7, 249-273.
- Mathews-Aydınlı, J. ve Elaziz, F. (2010). Turkish students' and teachers' attitudes toward the use of interactive whiteboards in EFL classrooms. *Computer Assisted Language Learning*, 23(3), 235-252.
- Morgan, G. L. (2008). *Improving student engagement: Use of the interactive whttteboard as an instructional tool to improve engagement and behavior in the junior high school classroom*. PhD Thesis. Liberty University, Virginia.
- Olgun, F. (2012). *Fizik dersinde ortaöğretim öğrencilerinin akıllı tahta kullanımı ile ilgili algılarının araştırılması*. Yüksek Lisans Tezi. İstanbul: Marmara Üniversitesi Eğitim Bilimleri Enstitüsü.
- Smith, H. J., Higgins, S., Wall, K. & Miller, J. (2005). Interactive whiteboards: boon or bandwagon? A critical review of the literature. *Journal of Computer Assisted Learning*. 21, 91-101.
- Türel, Y. K. (2011) An interactive whiteboard evaluation survey for university students: Validity and reliability analyses, *e-Journal of New World Sciences Academy Education Sciences*, 6(2), 1894-1903.
- Türel, Y. K. (2012). Teachers' Negative Attitudes towards Interactive Whiteboard Use: Needs and Problems. *Elementary Education Online*, 11(2), 423-439,
- Keser, H., Çetinkaya, L. (2013). Öğretmen ve Öğrencilerin Etkileşimli Tahta Kullanımına Yönelik Yaşamış Oldukları Sorunlar Ve Çözüm Önerileri, *International Periodical For The Languages, Literature and History of Turkish or Turkic* Volume 8/6, p. 377-403,
- Lai, H. J. (2010). Secondary school teachers' perceptions of interactive whiteboard training workshops: A case study from Taiwan. *Australasian Journal of Educational Technology*, 26, 511-522.
- Lee, M. (2010). Interactive whiteboards and schooling: The context. *Technology, Pedagogy and Education*, 19(2), 133-141.
- Smith, H. J., Higgins, S., Wall, K., & Miller, J. (2005). Interactive whiteboards: boon or bandwagon? A critical review of the literature. *Journal of Computer Assisted Learning*, 21(2), 91-101.
- Somyürek, S., Atasoy, B. ve Özdemir, S. (2009). Board's IQ: What makes a board smart? *Computers & Education*, 53(2), 368-374.

- Tezer, M. ve Deniz, K. A. (2009). Matematik Dersinde interaktif Tahta Kullanarak Yapılan Denklem Çözümünün Öğrenme Üzerindeki Etkisi. *Proceedings of 9th International Educational Technology Conference 4-5-6 May 2009 Hacettepe University*. Proceedings Book 500-506.
- Quashie, V. (2009). How interactive is the interactive whiteboard? *Mathematics Teaching*, 214, 33- 38.
- Saltan, F., Arslan, K. ve Gök, A. (2010). Teachers' acceptance of interactive white boards: A case study. In D. Gibson ve B. Dodge (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference, 2010* (pp. 2360-2365). Chesapeake, VA: AACE.
- Slay, H., Siebörger, I., & Hodgkinson-Williams, C. (2008). Interactive whiteboards: Real beauty or just "lipstick"? *Computers & Education*, 51, 1321-1341.
- Ünal, K. (2015). *Ortaöğretim Kurumlarında Tarih Öğretiminde Akıllı Tahta Kullanımına Yönelik Öğrenci Görüşleri*, yayımlanmamış yüksek lisans tezi). Gazi Üniversitesi Eğitim Bilimleri Enstitüsü Ankara.
- Yıldırım. A. ve Şimşek. H. (2008). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri (6.baskı)*. Ankara: Seçkin Yayıncılık.
- Zevenbergen, R. ve Lerman, S. (2008). Learning environments using interactive whiteboards: new learning spaces or reproduction of old technologies. *Mathematics Education Research Journal*, 20(1), 107-125.