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SMARTBOARD MEDIA IN INCREASING SCIENCE LEARNING INTEREST OF STUDENTS AT SANTA URSULA MIDDLE SCHOOL, JAKARTA

Meita Valentina Zuhro[1], Fransisca Wiwik Martasari[2], Lisayanti[3]

[123]Universitas Negeri Jakarta, Indonesia

***** Corresponding email: *zuhro.valentina.meita@gmail.com*

ABSTRACT

Learning is an interaction between teachers, students and the learning environment. The learning environment also includes the learning media facilities owned. This study aims to determine the extent to which the use of *smartboard media* in increasing the interest in learning science of students at SMP Santa Ursula Jakarta. Data collection techniques used interviews and questionnaires given to 3 science teachers, and 108 students at SMP Santa Ursula Jakarta. The data obtained for the total percentage of student questionnaire results was 80.88% while the total percentage value of the teacher questionnaire results was 87% . Based on the data obtained, it can be concluded that according to participants, the use of *smartboards* is in the good category in increasing learning interest while according to teachers, the use of *smartboards* is very good in increasing student learning interest.

Keywords: *smartboard, learning media, learning interest.*

INTRODUCTION

Learning is essentially an interaction between teachers, students, and the learning environment in an effort to achieve learning goals. In the learning process, teachers and students are two components that cannot be separated. Both components must have a mutually supportive interaction. The interaction between the two will be well established if there is a tool that can support the learning process. (Rahma, et al, 2019). The teaching and learning process will run effectively and efficiently if supported by the availability of supporting media. The provision of dynamic, conducive and dialogical educational media

and methodologies is very necessary for the development of students' potential, optimally. This is because the potential of students will be more stimulated if assisted by a number of media or facilities and infrastructure that support the interaction process being implemented.

Media or tools and learning resources have an important role in the learning process. Through the use of all these learning resources, it is expected to improve the quality of learning and development of students. A teacher can take advantage of the ease and sophistication of today's technology (Arifin, et al, 2022). Media in the learning process is directed so that the information mastered by students can be easily digested and understood. According to Zainiyati, 2017 in(Arifin, et al, 2022) It is emphasized that the function of media is as a tool to help teachers communicate messages, so that the communication process runs well and no errors occur. *Association for Education and Communication Technology* (AECT) defines media as any form used for the process of conveying information. While *the Education Association* (NEA) defines it as an object that can be manipulated, seen, heard, read or talked about along with instruments that are used properly in teaching and learning activities, can influence the effectiveness of instructional programs.(Arsyad, 2011)

The use of relevant media in the classroom can optimize the learning process. For teachers, learning media helps to concretize concepts or ideas and helps motivate active learners. For students, media can be a bridge to think critically and act. Thus, media can help teachers and students achieve the basic competencies that have been set. In order for learning media to be utilized properly, teachers need to know their learning needs and the problems faced by students about the material to be taught. Related to that, media needs to be developed based on relevance, basic competencies, materials and student characteristics. Teachers can act as creators, namely creating and utilizing media that is appropriate, efficient, and enjoyable for students. However, in its utilization in the classroom, it must be emphasized that students are the ones who should utilize the learning media. According to the behaviorist paradigm, learning is the transfer of knowledge from experts to novices (Isran Rasyid Karo-Karo S & Rohani, 2018).

The utilization of learning media means the ability of learners to utilize and take advantage of all existing learning media for the benefit of learners, both those used in schools and those outside of school. The utilization of learning media is now increasingly sophisticated, along with the sophistication of the development of science and technology, so that its benefits are greatly felt by learning implementers. Thus, the main emphasis of this study will describe the use of *Smartboard media* as one of the innovations of digital learning media to increase student interest in science learning in junior high schools.

Interest is a feeling of preference and attachment to something or an activity , without anyone telling you. According to (To'at, A. & Hidayah, F. F.,

2017)interest, it is a strong source of motivation and causes students' participation and activeness in learning activities. A similar opinion is explained by (Adodo, S.O. & Gbore, L. O. , 2012), that interest is one of the most important aspects in encouraging successful learning, because it will bring up good memories for students. According to (Djamarah, S. B. & Zain, A., 1996)students who lose interest in learning will more easily forget the material they have just learned. Therefore, according to (Haryanti & Wiyarsi, A, 2017)students with good learning motivation will show positive activities during learning, while students who tend to be passive are indicated to have low learning interest.

Natural Science is one of the main subjects at the elementary level. Natural science subjects have an important role to be taught at the elementary level, because these subjects teach students about how humans live in a relationship with their surroundings. Natural science learning not only provides knowledge to students but also provides experience in recognizing natural phenomena that occur and being able to respond according to the experiences and findings of students. Students gain an understanding of concepts and the development of useful natural science knowledge that can be applied in everyday life (Chasanah, Alif. et al, 2023). In general, some teachers still dominate the teaching and learning process by using the blackboard media. So that learning is boring and decreases student interest in the learning process.

Realize students in these problems, an appropriate learning media tool is needed that is able to visualize science learning materials well. Thus, the use of media can increase students' interest in learning materials. One of the limitations can be overcome by using technology media (Rahma, et al, 2019). The development of science and technology is increasingly encouraging efforts to improve and utilize the results of technology in the learning process. Law No. 20 of 2003 concerning the National Education System emphasizes that the development of technology for education is a conscious, planned effort to create an effective learning atmosphere and learning process so that students actively develop their potential. Based on this, sophisticated technology media is needed to create an active and educational learning atmosphere so that it can eliminate students' limitations in understanding learning (Rahma, et al, 2019).

Smartboard is an interactive whiteboard produced by smart technology company. Smart technology company was founded in 1987, but started producing smartboards a few years later. *Smartboard* allows users to prepare teaching materials at home then bring them to the classroom in the form of *flash drives* , and then connect them to *the smartboard* to get high-tech learning (Krantz, 2017). *Smartboard* is a learning medium that can facilitate the delivery of information, so that the learning process can be more practical, efficient, and fun. *Smartboard* has several functions, besides being a place to write, this whiteboard which is similar to a large LED television also functions like a computer or projector. All applications on the computer can be run directly on the *smartboard screen.* (Rahma, et al, 2019). *Smartboards* are very useful for

teachers and students, especially in the teaching and learning process, because *smartboards* provide several facilities in the form of mathematical applications that contain various tools needed in learning such as protractors, rulers, checkered paper and so on.

The use of *smartboard* is expected to produce interactive and multimedia-based learning materials and make it easier for teachers to deliver learning materials so that they can be well received by students (Rahma, et al, 2019). Based on research on the use (Nurhasanah et al, 2022)*of* smartboard learning media in science subjects for grade IV of SDN Rejosari, valid criteria were found with an average score of 4.42, while for practical criteria the average score was 88.4% and for effective criteria with $t_{count} = 11.02$ and $t_{table} = 1.64$. It was concluded in this study that smartboard media *meets* valid, practical and effective criteria so that it is suitable for use as a learning medium in science material for grade IV of elementary school. The existence of *smartboards* is no longer foreign to Indonesian people, especially in the world of education. *Smartboards* have been used in learning activities, one of which is at SMP Santa Ursula Jakarta.

Based on the description above, the researcher wants to know how the use of smart boards can increase the interest in learning science among students at Santa Ursula Middle School, Jakarta.

METHODS

This study used a qualitative method. The procedure in this qualitative study is scientific and systematic. The sample of this study came from 100 students and 3 teachers from Santa Ursula Junior High School (SMP) Jakarta. The research design used was descriptive qualitative. The object of the study was related to students' abilities in following science learning materials. The data collection and processing techniques used were through interviews and questionnaires. Interviews are data collection techniques used to collect information materials carried out by conducting oral questions and answers unilaterally, face to face, and have a specific purpose (Sudijono, 2011). In this study, interviews were conducted to determine teachers' responses regarding the use of smartboards *on* students' learning interests in science subjects. While questionnaires are data collection methods carried out by giving a set of questions or written statements to respondents to be responded to according to user requests (Widoyoko, 2016).

The questionnaire in this study was used to determine students' responses to the use of *smartboards* in science learning. Data analysis was carried out by calculating the number of alternative answers given by the questionnaire responses that had been distributed, with five alternative answers, namely (1) strongly disagree, (2) disagree, (3) normal, (4) agree, (5) strongly agree. After being calculated, it was then expressed as a percentage. After obtaining the percentage, it was then interpreted into the interpretation criteria. Questions from the questionnaire submitted to students included those related

to ease, attractiveness, and pleasure. Questions from the questionnaire submitted to educators included those related to ease, motivation and learning outcomes of students.

Table 1. Teacher Questionnaire

No	Teachers Responses to *Smartboard*	Answer Options				
		1	2	3	4	5
1	I know that smartboard is a technology-based learning media.					
2	I understand how to use the smartboard easily and precisely					
3	Students feel more motivated in learning using smartboards					
4	By using a smartboard, learning content is easier to convey to students.					
5	Student learning outcomes increase when using smartboard media					
6	Smartboards make it easier for educators in the learning process, especially in the science learning process, such as using smartboards for presentations, playing videos, etc.					
7	Smartboard is a media that can meet the needs of educators in applying learning plans easily and quickly.					
8	Smartboard helps educators in learning efficiently and effectively					

Table 2. Student Questionnaire

No	Student Responses to *Smartboard*	Answer Options				
		1	2	3	4	5
1	I understand the benefits and uses *of smartboards*					
2	I feel happy when learning using *smartboard media*					
3	I feel more motivated when learning using *the smartboard*					
4	I feel more focused when using *the smartboard*					
5	I feel that the content provided via *smartboard* is more interesting to understand.					
6	In the science learning process, I feel that learning using *a smartboard* makes it easier for me to understand.					
7	By using *a smartboard* , I can easily use various features on the laptop efficiently and easily in learning.					
8	*Smartboard* makes things easier for me in many ways during the science learning process, for example, I can more easily save notes written by the teacher.					
9	I had no difficulty using *the smartboard.*					
10	*Smartboards* are more attractive and easier to use than regular *whiteboards* .					
11	*Smartboard* facilitates the learning process well, such as using *power point* more easily, playing videos faster, etc.					

RESULTS AND DISCUSSION

The following is data obtained based on interviews and questionnaires. Interviews were conducted with three science teachers at SMP Santa Ursula Jakarta, while for students a random sample was taken from the total number of students as respondents. Interviews are one of the most widely used tools for collecting qualitative research data. (Rachmawati, 2007). Interviews allow researchers to collect diverse data from respondents in various situations and contexts (Sarosa, 2021).

Table 4. Teacher Interviews

Teacher Name	Learning Process Before Using *Smartboard*	Learning Process After Using *Smartboard*
Elisa Tri Meistiawan	The use of LCD is sometimes ineffective in the process of connecting data from a laptop / computer to be displayed on the available LCD. All must be available in the existing laptop or computer	In the learning process, it is not necessary to connect electronic devices for a long time to be displayed by students, but simply use an access card via all drive access in email on the *smartboard screen,* then it can be easily accessed and displayed by students.
F.A Dimas Wahyuanto	Less effective and learning only involves *sharing* PPT and videos via laptop/computer and then showing them on LCD	More interactive, optimizing digitalization in the learning process is able to motivate students in direct collaboration.
Yolanda Endear G.S	Less effective, so learning tends to be monotonous	Learning becomes easier, more interactive and more interesting for students, thus increasing students' motivation in learning and improving learning outcomes.

Student interview results

In the student interview stage, a random sample was taken from all class VII students at SMP Santa Ursula Jakarta, obtaining the following conclusions:

1. By using *a smartboard,* students tend to be more interested in the learning process because they can easily, quickly and effectively directly access learning materials together (collaboration).
2. The application of easy technology makes students understand the learning material better and quickly attracts students' attention.
3. It is easier to save data or notes from teacher explanations without having to worry about being left behind in the learning process in class, important notes in learning can easily be saved directly to the student's email.
4. The many conveniences in the *smartboard application* increase students' interest in learning in the science learning process, this is

apparent when the learning process runs interactively which makes the material understood optimally.

Table 5. Questionnaire Results on the Use of *Smartboard Media* in Teachers' Perceptions, N=3

No	Questionnaire Items	MIN	MAX	Average	SD
1	I know that *smartboard* is a technology-based learning media.	5	5	5	0
2	I understand how to use *the smartboard* easily and precisely	4	5	4.3	0.57735
3	Students feel more motivated in learning using *smartboards*	4	5	4.3	0.57735
4	By using *a smartboard* , learning content is easier to convey to students.	4	5	4.6	0.57735
5	Student learning outcomes increase when using *smartboard media*	4	4	4	0
6	*Smartboards* make it easier for educators in the learning process, especially in the science learning process, such as using smartboards for presentations, playing videos, etc.	4	5	4.6	0.57735
7	*Smartboard* is a media that can meet the needs of educators in applying learning plans easily and quickly.	4	4	4	0
8	*Smartboard* helps educators in learning efficiently and effectively	4	4	4	0

Based on table 5. obtained data from the results of filling out the questionnaire by 3 science subject teachers, it is known that for questionnaire items with an average of 5 the standard deviation value is 0, questionnaire items with an average of 4 the standard deviation value is 0, questionnaire items with an average of 4.3 the standard deviation value is 0.57 and an average of 4.6 the standard deviation value is 0.57.

Table 6. Questionnaire Results on the Use of *Smartboard Media* in Students' Perceptions, N=108

No	Questionnaire Items	Min	Max	Average	Standard Deviation
1	I understand the benefits and uses *of smartboards*	2	5	4.5	0.690137214
2	I feel happy when learning using *smartboard media*	2	5	4.1	0.835355801
3	I feel more motivated when learning using *the smartboard*	2	5	3.7	0.872843235
4	I feel more focused when using *the smartboard*	2	5	3.6	0.869615162
5	I feel that the content provided through *the smartboard* is more interesting to understand.	2	5	4.1	0.828438375

6	In the science learning process, I feel that learning using *a smartboard* makes it easier for me to understand.	2	5	3.7	0.98214415
7	By using *a smartboard* , I can easily use various features on the laptop efficiently and easily in learning.	3	5	4.2	0.774004346
8	*Smartboard* makes things easier for me in many ways during the science learning process, for example, I can more easily save notes written by the teacher.	2	5	4.1	0.880296608
9	I had no difficulty using *the smartboard.*	1	5	3.8	1,103,622,218
10	*Smartboards* are more attractive and easier to use than regular *whiteboards* .	2	5	4	0.873636009
11	*Smartboard* facilitates the learning process well, such as making it easier to use PowerPoint, playing videos faster, etc.	2	5	4.3	0.844576286

Based on table 6, the data obtained from the results of filling out the questionnaire by 108 students with the smallest standard deviation value being 0.69 with questionnaire item 1 and the largest standard deviation value being 1.1 with questionnaire item 9.

Table 7. Percentage Value of Student Questionnaire

No	Questionnaire Items	Questionnaire item values	Percentage	Overall presentation
1	I understand the benefits and uses of smartboards	488	90.3%	
2	I feel happy when learning using smartboard media	444	82.2%	
3	I feel more motivated when learning using the smartboard	410	76%	
4	I feel more focused when using the smartboard	393	72.7%	
5	I feel that the content provided via smartboard is more interesting to understand.	445	82.4%	
6	In the science learning process, I feel that learning using a smartboard makes it easier for me to understand.	403	74.6%	80.88%
7	By using a smartboard, I can easily use various features on the laptop efficiently and easily in learning.	455	84.2%	
8	Smartboard makes things easier for me in many ways during the science learning process, for example, I can more easily save notes written by the teacher.	447	82.7%	
9	I had no difficulty using the smartboard.	415	76.8%	
10	Smartboards are more attractive and easier to use than regular whiteboards.	438	81%	

11	Smartboard facilitates the learning process well, such as making it easier to use PowerPoint, playing videos faster, etc.	469	86.8%	

Based on table 7, it is known that the total percentage of student questionnaire items is 86.6%.

Table 8. Percentage Value of Teacher Questionnaire

No	Questionnaire Items	Questionnaire item values	Percentage	Total Percentage
1	I know that smartboard is a technology-based learning media.	15	100%	87%
2	I understand how to use the smartboard easily and precisely	13	86%	
3	Students feel more motivated in learning using smartboards	13	86%	
4	By using a smartboard, learning content is easier to convey to students.	14	92%	
5	Student learning outcomes increase when using smartboard media	12	80%	
6	Smartboards make it easier for educators in the learning process, especially in the science learning process, such as using smartboards for presentations, playing videos, etc.	14	92%	
7	Smartboard is a media that can meet the needs of educators in applying learning plans easily and quickly.	12	80%	
8	Smartboard helps educators in learning efficiently and effectively	12	80%	

Based on table 8, it is known that the total percentage of teacher questionnaires is 87%.

Learning is a relatively permanent change in behavior or behavioral potential as a result of experience or reinforced practice. Learning is an activity or a process to acquire knowledge, improve skills, improve behavior, attitudes, and strengthen personality (Ariani, et al. 2022). In the process of learning science, human contact with nature is called experience . Ronald Gross in his book entitled *Peak learning* (1991), as a learning practice that is less conducive, undemocratic, does not provide opportunities for creativity and has not developed the full potential of students optimally, giving rise to several myths in learning such as learning is boring, is an unpleasant activity; learning is only related to the material and skills provided by the school; learners must be passive, accept and follow what the teacher gives; in learning, the learner is under the orders and rules of the teacher; learning must be systematic, logical and planned; learning must follow all predetermined programs. These myths

are based on various real factors experienced by students with limited facilities in education, minimal teacher ability in mastering technology, and the habituation of rigid ancient community views on the learning process, resulting in many things that are not directly proportional to modern education today. It is called modern education, because currently the learning process in any education must be directly proportional to existing technological advances.

Technological advances in the development of the modern world today make all lines of education have to process and organize themselves to optimize the best way so that students have good learning abilities and good learning interests. It is undeniable that the current generation of students is very literate with technology, so the use of technology in learning is very important. In accordance with the vision of a technology-based school, therefore, SMP Santa Ursula Jakarta has optimal facilities to support the learning process at school. One of the things used to support the learning process at school today is *a smartboard,* which is a media in the form of a smart board installed in each class as a replacement for *the whiteboard* that has been used so far. In addition to replacing *the whiteboard* , there are other features owned by *the smartboard.*

Based on the results of interviews conducted with respondents of 3 science teachers and students who filled out the questionnaire taken from a random sample of 108 grade VII students. Several conclusions were obtained from the use of *smartboards* during the science learning process. First, the use of *smartboards* in each class makes the learning process at SMP Santa Ursula which is based on technology easier. Second, *smartboards* are one of the media that can be used by teachers and students in the learning process by utilizing the facilities owned by the smartboard . With *smartboards* , the learning process is more interesting and easily accessible to students quickly. Third, optimal use of *smartboards* by involving students who are active in collaborating, and during the learning process all students are equipped with their own laptops to be able to connect directly to the *smartboard access* used by the teacher makes the learning process not monotonous, not rigid only centered on the teacher but all parties in the class are able to collaborate well. It is said that the interest in learning of students is increasing as seen in the interactive learning process and student learning outcomes owned by teachers during the science learning process.

However, behind its advantages, *smartboards* have weaknesses, namely because they are technology-based learning media so that in the process of using them 80% depends on the existing internet network. So that sometimes obstacles arise during the learning process if internet access experiences network disruptions.

CONCLUSION

The research conducted on school facilities at SMP Santa Ursula Jakarta, especially *smartboards,* was conducted using qualitative data collection techniques, data collection was conducted through interviews and questionnaires on students' learning motivation. The results showed that the use of *smartboards* has a positive impact on the science learning process, especially in increasing students' interest in learning in the classroom, as seen in the results of data obtained from interviews and questionnaires from teachers and students. The total percentage of questionnaires from students was 80.88% while the total percentage of teacher questionnaires was 87% with good and very good categories.

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