Smart interactive whiteboard in EFL class at Islamic university

Aryawira Pratama[1]*, Edi Rozal[2], Reni Andriani[3], Mayang Sastra Sumardi[4], Rahmadani Putri[5], Khotimah Mahmudah[6], Sri Ramdayeni Sakunti[7]

[1]English Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN Sulthan Thaha Saifuddin Jambi, Jambi, Indonesia; Email: aryawirapratama@uinjambi.ac.id
[2]English Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN Sulthan Thaha Saifuddin Jambi, Jambi, Indonesia; Email: edirozal@uinjambi.ac.id
[3]English Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN Sulthan Thaha Saifuddin Jambi, Jambi, Indonesia; Email: reniandriani@uinjambi.ac.id
[4]English Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN Sulthan Thaha Saifuddin Jambi, Jambi, Indonesia; Email: mayangsasrtasumardi@uinjambi.ac.id
[5]English Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN Sulthan Thaha Saifuddin Jambi, Jambi, Indonesia; Email: rahmadaniputri@uinjambi.ac.id
[6]English Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN Sulthan Thaha Saifuddin Jambi, Jambi, Indonesia; Email: khotimahmahmudah@uinjambi.ac.id
[7]English Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN Sulthan Thaha Saifuddin Jambi, Jambi, Indonesia; Email: sriramdayenisakunti@uinjambi.ac.id

ABSTRACT

This research aims to investigate students' perception of using Smart Interactive Whiteboard in the English as a foreign language (EFL) classroom in the State Islamic University in Jambi city. This research employs a quantitative survey method, utilizing a questionnaire as the primary data collection tool. The questionnaire consisted of 26 five-point Lickert-scale items in order to measure the students' perceptions about (1) Perceived Learning Contribution, (2) Motivation, (3) Perceived Efficiency, and (4) Perceived Negative Effects. The results of the survey show that students like having smart, interactive whiteboards in the classroom. The results show that these technological tools help people learn, get motivated, feel like they are working well, and don't have any bad affects. The combination of audio and visual elements makes it easier to understand and provides a stimulating learning environment. Students also say they are more engaged, focused, involved, and excited about learning. Smart, interactive whiteboards are thought to make classrooms more visible, more organized, and better at keeping track of time. The fact that most students disagree with the idea that these tools have bad results shows that they like using them. Overall, the results show how smart interactive whiteboards can be benefited for positive learning experiences, motivation, efficiency, and student engagement in a positive and pleasant learning atmosphere.

Keywords: EFL Students; Islamic University; Perception; Questionnaire; Smart Interactive Whiteboard.

INTRODUCTION

The use of technology in the classroom has transformed the way teachers teach and students learn (Bakiyeva et al., 2020). One such technology that is being increasingly used in English as a foreign language (EFL) classroom is the Smart interactive whiteboard. This technology offers a range of benefits that can help students improve their language skills, such as reading, writing, listening, and speaking (Idoghor et al., 2022; Tahmina, 2022; Рогульська & Тарасова, 2021).

The Smart interactive whiteboard is a large interactive display that can be connected to a computer or tablet. It allows teachers to display and interact with digital content, such as

text, images, videos, and audio recordings. Students can also interact with the content by writing on the board, highlighting important points, and manipulating digital elements. This makes it an ideal tool for teaching language skills in an engaging and interactive way (Ahmad & Ali, 2019; Kühl & Wohninsland, 2022).

One of the main benefits of using the Smart interactive whiteboard in EFL classrooms is that it can help to improve reading skills. Teachers can display texts on the board and use interactive tools, such as highlighting, underlining, and zooming, to help students understand the meaning of the text. They can also use the board to teach vocabulary and grammar by displaying examples and asking students to identify them (Luo & Yang, 2016). Another benefit of using the Smart interactive whiteboard in EFL classrooms is that it can help to improve writing skills (Mohamed et al., 2019). The board can be used to display writing prompts and provide feedback on student writing in real-time. Teachers can also use the board to teach grammar and sentence structure by displaying examples and asking students to identify the correct structure.

The Smart interactive whiteboard is also useful in teaching listening (Kırbas, 2018) and speaking skills (Kostikova et al., 2019). Teachers can use the board to display videos and audio recordings and ask students to listen and identify specific details. They can also use the board to provide visual aids, such as subtitles, to help students understand the meaning of the recording. In addition to these benefits, the Smart interactive whiteboard is also useful in teaching speaking skills. Teachers can use the board to display speaking prompts and ask students to practice speaking in front of the class. They can also use the board to provide visual aids, such as images and videos, to help students describe and discuss different topics. The Smart interactive whiteboard is especially useful in EFL classrooms as it can help to overcome language barriers. Teachers can use the board to display visual aids, such as images and videos, to help students understand the meaning of words and phrases. They can also use the board to display translations and provide immediate feedback to students. Another benefit of using the Smart interactive whiteboard in EFL classrooms is that it can help to increase student engagement and motivation (Abdullah et al., 2019). Learning a new language can be a challenging and intimidating task, but the interactive and collaborative nature of the board can make it more fun and engaging. Students can work together to practice their language skills, which can help to build a sense of community and camaraderie in the classroom.

Using the Smart interactive whiteboard in EFL classrooms can also help to improve student performance. Teachers can use the board to provide immediate feedback to students, which can help them to identify their strengths and weaknesses and work towards improving their language skills (Kyriakou & Higgins, 2016). The board can also be used to create quizzes and other interactive activities that can help teachers to gauge student understanding and progress.

The Smart interactive whiteboard can also help to prepare students for the digital world they will encounter in their future careers. In many industries, communication is now done digitally, and being able to use interactive technology is a necessary skill. By using the Smart interactive whiteboard in EFL classrooms, students can learn how to create digital content, collaborate with others, and use technology to improve their language skills (Jeong, 2022). There are a number of reasons why researching how students feel about using Smart interactive whiteboards in English as a foreign language classes could be a useful and interesting thing to do (Kırbas, 2018; Tertemiz et al., 2015). First, the use of technology in language learning. Smart interactive whiteboards are becoming more and more popular in language classrooms. Finding out how students feel about this technology can help us understand how technology can help or hurt language learning. Second, the effect on how much students care. Interactive whiteboards can get students more involved in the classroom, but it's important to know how this changes how well students learn and how it compares to more traditional ways of teaching. The role of training teachers. Teachers need

to be shown how to use interactive whiteboards to help their students learn a language. By asking students what they think, teachers can find out where they might need more training or help. After that, here are some possible perks of learning a language. Interactive whiteboards can help people learn and use a language in new ways. By finding out how students think about this technology, we can find the best ways to use it to help them learn a language. And finally, the importance of context. how students see interactive whiteboards may rely on their cultural and linguistic background, their age, and their level of proficiency. By looking into these things, we can learn more about how technology affects different types of learning (Al-Rabaani, 2018; Almekhlafi et al., 2016; Aydlnll & Ortaçtepe, 2018; Balta & Duran, 2015; Copriady, 2014; Gashan & Alshumaimeri, 2015; Hassan Alshaikhi, 2016; Rinekso & Lesagia, 2020; Yangın Ekşi & Yeşilyurt, 2018; Zhang, 2019).

In conclusion, the Smart interactive whiteboard is a powerful tool that can help to transform the way that language skills are taught and learned in EFL classrooms (Abdullah et al., 2019; Ahmad & Ali, 2019; Davis, 2018; İstifçi et al., 2018; Jeong, 2022; Kellerman et al., 2018; Kırbas, 2018; Kostikova et al., 2019; Kühl & Wohninsland, 2022; Mohamed et al., 2019). It offers a range of benefits, from improving reading, writing, listening, and speaking. It also can provide valuable insights into how technology can support language learning and inform best practices for language instruction in the digital age.

METHODS

Research Design

This research is aimed to explore the students' perception on using Smart Interactive Whiteboard in English Foreign Language. The design of this research used Quantitative study which employed the survey study. Surveys are used to collect data from a large number of participants and can be administered in various formats, including online, paper, or in-person (Check & Schutt, 2012; Cohen et al., 2018; Creswell, 2014; Lodico, 2010; Rukminingsih et al., 2020; Rusandi & Muhammad Rusli, 2021). The survey questionnaire is designed to collect quantitative data in the form of numbers or ratings. The responses are then analyzed using statistical methods to identify patterns, relationships, and trends. Surveys are often used to gather data on attitudes, opinions, behaviors, and demographics.

Setting and Participants

This research was conducted at State Islamic University in Jambi City. The participants in this research are all of the students who takes the English Department at this University. Total sampling was acquired to take the result of perception in using Smart Interactive Whiteboard through English Foreign Language class. Total sampling, also known as census sampling, is a type of sampling method used in research to collect data from an entire population. In total sampling, every member of the population is included in the sample, so there is no need to select a subset of the population for the study. Total sampling can provide a more accurate representation of the population since it includes all members, and there is no risk of bias resulting from the sampling process. However, total sampling can be more time-consuming and costly than other sampling methods, and it may not be practical or feasible for large populations. The reason to take all the students as the participants is that the University has already used the Smart Interactive Whiteboard for a year and it is categorized as a new tool for them. The participants are 250 students, including students in the second semester, fourth semester, and sixth semester. Ethical procedures were followed to ensure the participants' consent and confidentiality. All students were informed about the purpose of the research, and their participation was voluntary. Data was anonymized to protect the identities of the participants.

Instrument and data analysis

The data for this research were collected using a structured questionnaire administered via Google Forms. The questionnaire, consisting of 26 five-point Likert-scale items, was designed to measure students' perceptions across four factors: Perceived Learning Contribution, Motivation, Perceived Efficiency, and Perceived Negative Effects. The instrument, originally developed by Öz (2014), was distributed to both students and teachers. Participants rated each item on a scale from (1) strongly disagree to (5) strongly agree. Notably, the student questionnaire included nine negatively-keyed statements related to perceived negative effects, which were reverse coded during data analysis to maintain consistency. Once the responses were collected, the data were systematically coded and entered into a statistical software program. Descriptive statistics were used to summarize the data, and inferential statistical techniques were applied to test the research hypotheses and examine relationships between the variables.

RESULTS AND DISCUSSION

Perception

The perception table categorizes students' responses into three distinct levels: Low, Medium, and High, based on their total scores from the questionnaire measuring Perceived Learning Contribution, Motivation, Perceived Efficiency, and Perceived Negative Effects. These categories are determined using statistical measures of central tendency and variability, specifically the mean (M) and standard deviation (SD). The result of the questionnaire was analyzed by using the categorization of the score in table 1:

Table 1. The categorization of mean score

Categorization	Qualification	Interval	Criteria
Low	Negative Perception	X < 62,4	X < M - 1SD
Medium	Neutral	62,4 ≤ X < 93,6	M - 1SD ≤ X < M + 180
High	Positive Perception	123,6 ≤ X	M + 1SD ≤ X

As it is displayed in Table 1, a score falling below 62.4 is classified as Low, indicating a negative perception, which corresponds to scores less than the mean minus one standard deviation (M - 1SD). Scores between 62.4 and 93.6 are classified as Medium, reflecting a neutral perception, and fall between the mean minus one standard deviation (M - 1SD) and the mean plus 180. Scores above 123.6 are classified as High, indicating a positive perception, corresponding to scores greater than the mean plus one standard deviation (M + 1SD). This categorization helps to identify the overall perception of students, highlighting areas where their views are particularly positive or negative.

From the result of the questionnaire, the researchers get two perceptions. They are positive and negative perception. The term "positive perception" refers to the inclination to analyze and make sense of inputs, events, and circumstances in a constructive and advantageous manner. It entails centering one's attention on the positive parts, identifying the bright side of things, and having an optimistic viewpoint. As the result of the statement without the symbol of marking, it refers to the statement of agreement.

Table 2. Perceived Learning Contribution

No	Items	5	%	4	%	3	%	2	%	1	%	Mean	SD
	Perceived Learning Contribution												
1	I learn more when my teacher uses the whiteboard	98	39	110	44	32	13	6	2	4	2	4.15	.869
2	It is easier to understand the lesson when my teacher uses a Smart Interactive Whiteboard	193	77	49	20	5	2	2	1	1	0	4.72	.581
3	Using audio and visual materials with Smart Interactive Whiteboard help me understand the lesson better	191	76	52	21	3	1	3	1	1	0	4.72	.591
4	I find the opportunity to learn from different sources with the use of Smart Interactive Whiteboard	88	35	124	50	30	12	7	3	1	0	4.16	.772
5	Smart Interactive Whiteboard makes it easier for me to remember what I learned in class	117	47	103	41	25	10	3	1	2	1	4.32	.767

PLC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive Perception	250	100,0	100,0	100,0

Figure 1. The result of perceived learning contributions' categorization from SPSS

Perceived Learning Contribution

According to the findings of the Perceived Learning Contribution survey in Table 2, the majority of respondents agreed that perceived learning contribution increases when teachers use the interactive whiteboard, with 97% of students finding the material simpler and easier to understand, especially when audio and visual elements are incorporated. This aligns with Hüseyin Öz's study, which also found that both teachers and students have favorable perceptions of IWB technology, noting increased engagement and motivation. Similar to your findings, Öz's study highlighted that student found lessons more interesting and interactive, and higher usage of IWBs correlated with more positive perceptions among students. Additionally, the findings of PLC indicated that 89% of respondents found it easier to remember information when the teacher used a smart interactive whiteboard, which Öz's study also supported by noting the enhancement of information retention through IWB use.

Table 3. Motivation

No	Items	5	%	4	%	3	%	2	%	1	%	Mean	SD
Motivation													
6	I like going to the front of the class to use the Smart Interactive Whiteboard	202	81	44	18	2	1	1	0	1	0	4.78	.511
7	It seems difficult for me to use Smart Interactive Whiteboard*	3	1	4	2	15	6	202	81	26	10	2.02	.580
8	I prefer lessons that are thaught with a Smart Interactive Whiteboard	87	35	139	56	20	8	3	1	1	0	4.24	.680
9	It makes me uncomfortable when my work is shown to the whole class on the Smart Interactive Whiteboard*	7	3	7	3	20	8	116	46	100	40	1.82	.903
10	I concentrate better when my teacher uses a Smart Interactive Whiteboard	88	35	138	55	20	8	2	1	2	1	4.23	.696
11	I get to join in lessons more when my teacher uses a Smart Interactive Whiteboard	154	62	77	31	14	6	4	2	1	0	4.52	.713
12	Smart Interactive Whiteboard make learning English more interesting and exciting	69	28	125	50	46	18	5	2	5	2	3.99	.850
13	It is easier to keep my attention when a Smart Interactive Whiteboard is used during the lesson	85	34	157	63	7	3	1	0	0	0	4.30	.541
14	Use of a Smart Interactive Whiteboard makes it easier for me to be motivated during the lesson	103	41	132	53	10	4	4	2	1	0	4.32	.673
15	Smart Interactive Whiteboard use increases my	92	37	148	59	8	3	1	0	1	0	4.32	.597

No	Items	5	%	4	%	3	%	2	%	1	%	Mean	SD
	Motivation												
	interest in the English lesson												
16	If my English teachers use Smart Interactive Whiteboard more often, I will enjoy lessons more	99	40	137	55	10	4	3	1	1	0	4.32	.648

M

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive Perception	250	100,0	100,0	100,0

Figure 2. The result of motivations' categorization from SPSS

Motivation

Students responded to nine questions regarding the motivation for using Smart Interactive Whiteboards with an agree position and two statements with a disagree position, reflecting a positive interpretation overall. Specifically, while some students found using IWBs challenging or uncomfortable, 91% and 86% respectively disagreed with these statements. Moreover, 245 students agreed they would go to the front of the class if the teacher used an IWB, and 91% preferred lessons taught with smart interactive whiteboards. Additionally, 90% of students could concentrate better, 93% participated more in class, 78% found the lessons more fascinating and exciting, and 97% believed the IWB maintained their attention. There was almost unanimous consensus (96%) that using a smart interactive whiteboard increased students' interest levels and was entertaining. These findings align with Hüseyin Öz's research, which also indicated that IWBs positively affect student engagement and motivation, making lessons more interactive and interesting. Öz's study supported the notion that higher usage of IWBs correlated with more positive perceptions among students, enhancing their motivation and learning experience.

Table 4. Perceived Efficiency

No	Items	5	%	4	%	3	%	2	%	1	%	Mean	SD
III	Perceived Efficiency - PE												
17	Smart Interactive Whiteboard make the teachers' drawings and diagrams easier to see	200	80	40	16	8	3	1	0	1	0	4.74	.574
18	The lessons become more organized when a Smart Interactive Whiteboard is used	87	35	151	60	9	4	2	1	1	0	4.29	.613
19	Using a Smart Interactive Whiteboard saves time and the lesson moves smoothly	133	53	89	36	26	10	1	0	1	0	4.41	.724

No	Items	5	%	4	%	3	%	2	%	1	%	Mean	SD
III	Perceived Efficiency - PE												
20	There is no difference between my English teacher's use of a traditional board and a Smart Interactive Whiteboard in terms of teaching techniques and methods*	4	2	5	2	5	2	155	62	81	32	1.78	.723
21	I think there is not much difference between a Smart Interactive Whiteboard and a normal method*	4	2	5	2	5	2	147	59	89	36	1.75	.753

PE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive Perception	250	100,0	100,0	100,0

Figure 3. The result of Perceived Efficiencies' categorization from spss

Perceived Efficiency

Related to the Perceived Efficiency, three statements show a high level of agreement among students. When teachers used smart interactive whiteboards, 96% agreed that it made drawings and diagrams easier to see, 95% agreed that lessons became more organized and saved time, and 89% agreed that the lesson moved smoothly. In contrast, statements regarding the lack of difference between using a traditional board and a smart interactive whiteboard in terms of teaching techniques and methods showed a high level of disagreement, with 92% and 95% respectively. These negative responses actually indicate a positive effect, as students disagreed that there was no difference between using traditional boards and smart interactive whiteboards, highlighting the perceived significant impact of smart interactive whiteboards. Similarly, the disagreement with the statement about there being not much difference between normal methods and using smart interactive whiteboards underscores the substantial positive difference students perceive with the use of IWBs. These findings are in line with Hüseyin Öz's research, which also emphasized the enhanced efficiency and organization brought by IWBs. Öz's study supported the idea that IWBs make lessons more structured and efficient, reinforcing the positive impact on teaching methods and classroom management. The research underscores the substantial improvements in lesson delivery and student perception of efficiency with the use of interactive whiteboards, further validating their effectiveness in modern educational settings.

Table 5. Perceived Efficiency

No	Items	5	%	4	%	3	%	2	%	1	%	Mean	SD
IV	Perceived Negative Effects – PNE												
22	Sometimes deficiencies of the Smart Interactive Whiteboard screen and sunlight in the classroom make it difficult to see the things on the Smart Interactive Whiteboard*	9	4	10	4	55	22	101	40	75	30	2.10	.981
23	Smart Interactive Whiteboard often break down and recalibration causes a waste of time*	0	0	0	0	0	0	202	81	48	19	1.81	.395
24	When my teacher uses a Smart Interactive Whiteboard, I cannot keep up with the lesson because the pace of the lesson*	5	2	8	3	21	8	209	84	7	3	2.18	.626
25	During Smart Interactive Whiteboard use, there is a lot of noise in class*	1	0	11	4	23	9	201	80	14	6	2.14	.586
26	Smart Interactive Whiteboard was exciting at the beginning but not anymore*	12	5	17	7	55	22	99	40	67	27	2.23	1.069

* Asterisks indicate negatively-keyed items in the scale

PNE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive Perception	250	100,0	100,0	100,0

Figure 4. The result of Perceived Negative Effects' categorization from SPSS

The last atmosphere of the questionnaire is about Perceived Negative Effects. From the result above. All of the result in this factor indicates of disagreeing. But, if the statements consist of negative perception and the result of it show negative also, it means that it has a positive view of perception. The students' perception on difficulty to see the things in Smart Interactive Whiteboard, Smart Interactive Whiteboard often break down, the students can not keep up with the lesson, there is a lot of noises, and it is only exciting at the beginning but not anymore showed the negative result. It means that, almost of the students 70%, 100%, 87%, 86%, and 67% are disagree of those statements.

The survey results regarding the Perceived Learning Contribution indicate that the vast

majority of respondents had a favorable perception of the learning contribution facilitated by the use of interactive whiteboards in the classroom. Specifically, 97% of students believed that the content became much simpler to understand when a Smart Interactive Whiteboard was used. This suggests that the advanced capabilities and interactive nature of the whiteboard significantly enhance students' comprehension of the material. Furthermore, the incorporation of auditory and visual components by the instructor was shown to significantly increase students' levels of comprehension, supporting the efficacy of multi-sensory instructional strategies. These findings align with the research of De Vita et al. (2018), which also highlighted the positive impact of IWBs on student comprehension and engagement. The ability to access a variety of sources through IWBs was valued by students, with 89% agreeing that it made information easier to remember. This further emphasizes the positive impact of IWBs on learning and memory retention. Comparing these findings with previous research underscores the relevance of your study, demonstrating how IWBs can create a stimulating and effective learning environment.

Additionally, the survey results about students' motivation to use Smart Interactive Whiteboards reveal interesting insights. Students showed a favorable attitude towards the utilization of IWBs in the classroom, agreeing with the majority of the questions. Despite some contradictory responses, with 91% and 86% respectively disagreeing that IWBs are challenging or uncomfortable to use, these negative responses actually indicate a positive effect. This suggests that students generally have a positive impression of IWBs. Additionally, 91% of students preferred lessons taught with IWBs, 90% found they could concentrate better, 93% reported increased class participation, and 97% believed IWBs maintained their attention. These findings align with the research of Adel et al. (2019), which also found that IWBs positively affect student engagement and motivation. The high level of agreement on the benefits of IWBs further emphasizes their positive influence on student motivation and engagement, underscoring the effectiveness of these technologies in enhancing the educational experience.

Perceived efficiency is a crucial factor in evaluating the effectiveness of smart interactive whiteboards in the classroom. The survey results showed significant agreement among participants on statements about the efficiency of IWBs. Students found that IWBs improved visibility for drawings and diagrams, better organized lessons, and saved time, with 96%, 95%, and 89% respectively agreeing with these statements. Contrarily, participants disagreed with statements suggesting there was no substantial difference between traditional whiteboards and IWBs, with 92% and 95% respectively disagreeing. These negative responses actually highlight the perceived significant positive impact of IWBs. Students recognized a considerable distinction between traditional methods and IWBs, emphasizing the latter's superior efficiency. These findings resonate with the study of Рогульська and Тарасова (2021), which also supported the enhanced efficiency and organization brought by IWBs. Your research further highlights the substantial improvements in lesson delivery and student perception of efficiency with IWBs, reinforcing their effectiveness in modern educational settings.

Lastly, the survey also investigated students' perceptions of potential drawbacks associated with the use of smart interactive whiteboards. The results showed that students disagreed with statements about the inability to keep up with the lesson, excessive noise, frequent breakdowns, difficulty seeing things on the board, and diminishing excitement. These negative responses, with 70%, 100%, 87%, 86%, and 67% respectively disagreeing, actually indicate a positive perspective. The significant number of students who disagreed with these unfavorable assertions suggests that they did not experience these negative effects. This implies that students found IWBs to be visually clear, reliable, conducive to their learning pace, free from excessive loud interruptions, and consistently engaging. These findings align with the findings of Aykat and Günüç (2020) which also highlighted the minimal negative impact of IWBs on the learning environment. The lack of perceived negative effects further emphasizes the positive reception of IWBs among students, highlighting their potential to enhance the educational experience without significant drawbacks.

CONCLUSION

The results of the questionnaire indicate that smart interactive whiteboards have a positive effect on learning experiences, motivation, efficiency, and student engagement. Students recognize these tools' benefits and value their contribution to a more efficient and pleasant learning environment. The findings have several pedagogical implications for both teachers and learners. For teachers, smart interactive whiteboards can enhance lesson delivery by making content more accessible and engaging through the integration of multimedia elements, allowing for more interactive and student-centered teaching methods that improve comprehension and retention. For learners, the increased engagement and interactive nature of smart interactive whiteboards can foster a more stimulating and motivating classroom environment, leading to better academic outcomes and a greater enthusiasm for learning. However, this study has limitations, including its reliance on self-reported data and a specific context, which may not be generalizable to all educational settings. Future research should explore the long-term effects of smart interactive whiteboard use on learning outcomes and investigate their impact across diverse educational contexts to provide a more comprehensive understanding of their benefits and limitations.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this paper.

AUTHOR CONTRIBUTIONS

Pratama, A..: Conceptualization (lead), methodology (lead), writing – original draft (lead), review (lead), editing (lead), and securing funding. Rozal, E., Andriani, R., Sumardi, M.S., Putri, R., Khotimah Mahmudah, K., Sakunti, S.R.: Conceptualization (supporting), methodology (supporting), writing – original draft (supporting), review (supporting).

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