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Digital Tools in Language Education: A Case Study on the Integration of Whiteboard in German Language Classes at SMAN 8 Malang, Indonesia

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Abstract. This research aims to describe the utilization of Whiteboard.fi as a supporting tool in German language learning and the responses of 11th-grade students from IPA 5 class at SMAN 8 Malang during the academic year 2022/2023 when using Whiteboard.fi. The research employed a qualitative descriptive method, and data were collected through observation and questionnaire responses. The findings indicate that using Whiteboard.fi as a learning tool in German language classes creates an enjoyable learning experience. Both students and teachers actively engage in the learning process through feedback mechanisms. In their feedback, students expressed positive opinions and reported a lack of boredom during the lessons. The optimal utilization of Whiteboard.fi is achieved when accessed via a PC/laptop, as the more expansive display enhances the ease of note-taking during lessons.

Keywords: Whiteboard.fi; supportive learning media; German language learning.

INTRODUCTION

The technological era has brought numerous positive impacts in various fields, with education being one of them. Technological advancements in education have spurred creativity and innovation in learning activities. Learning media or supporting materials are essential to facilitate teachers in delivering content [1]. Technology in education can provide diversity in learning media. The appropriateness of learning media selection involves the characteristics and advantages of the media used to connect with learning components [2]. Teachers must be aware of the benefits or attributes of the media to be used. The primary reasons related to considerations for selecting learning media are divided into four categories: learning media serves as a teaching aid, familiarity (when the teacher is already accustomed to the media), clarity (to clarify specific learning messages), and active learning (aspects that actively involve students in the learning process) [1].

Based on interviews with German Literature students at Malang State University who participated in the Teaching Assistantship Program at

SMAN 8 Malang, the learning activities often involve using digital media or teaching materials. Occasionally, teachers explain the material through textbooks and add notes on the Whiteboard. Students appear more enthusiastic when using digital media accessed on gadgets or laptops than printed books. The digital media commonly used by German language teachers to deliver instructional materials include e-books and PowerPoint presentations. Other media such as YouTube, Google Classroom, Quizizz, and Kahoot are also employed in teaching activities and are typically utilised for evaluation purposes.

The selection of appropriate learning media is used to stimulate the minds, attention, or skills of students, thereby fostering the learning process [3]. Whiteboard is one active learning digital media accessed through web-based search engines. One of the advantages of a Whiteboard is that teachers can present materials without manually writing on the Whiteboard using markers. Through Whiteboard, teachers can view the entire digital Whiteboard of students and share notes on the students' whiteboards. Students can join the Whiteboard by entering a code or scanning a barcode. According to information on the

page Whiteboard.fi, the company Kahoot develops the resource. The features of the Whiteboard that support learning include the ability to write text, erase text, draw, add images, annotate images, add emojis, and save notes in PDF format [4]. Both teachers and students have their digital whiteboards. Students can view both the teacher's digital Whiteboard and their own.

There is no specific feature on the Whiteboard to support listening and speaking skills. The features available on the Whiteboard are still limited to keeping the learning of reading and writing skills. Teachers can use an alternative to support listening skills by displaying a barcode linked to YouTube or Google Drive containing audio/video content. In this study, the researcher focused on everyday life (Food and drink, fashion and clothing). The researcher utilised a German language learning video about dining in a restaurant from the YouTube account "Learn German" and presented it as a scannable barcode for students using their smartphones. This video was employed to familiarise students with listening to German language dialogues.

There are several previous studies relevant to this research. The first relevant study is [5]. The findings of this research indicate that using digital teaching tools and applications is the most effective way to capture students' attention and enhance their learning motivation. The second study is [6]. The use of Google Jamboard proves to be an appropriate method for assessing comprehension of the presented material. Most study participants demonstrated creativity in explaining French grammar using Google Jamboard [6]. The third study is [7]. Based on the final results of the research, effectiveness and comfort in using the media were obtained. Learning with Padlet media can assist students in improving their descriptive text writing skills efficiently, enjoyably, and quickly [7].

Based on the presentation of the research findings conducted by the three previous researchers, there is a similarity in the media used, which features a whiteboard similar to a Whiteboard. In addition to sharing similarities with prior studies, this research introduces a distinction. The difference lies in using a Whiteboard in foreign language classes and integrating video barcodes to support listening skills. Given this background, the researcher aims to examine the Whiteboard as a supplementary learning medium in German language education and describe student re-

sponses regarding using the Whiteboard as a supporting instructional tool in German language classes.

METHODS

The approach employed in this research is qualitative. It aims to describe the use of the Whiteboard in German language learning and students' responses to this media by the Everyday life material (Food and drink, fashion and clothing). The research design used is descriptive qualitative [8]. The data sources for this study are the researcher as the main instrument and the 29 students of class XI IPA-5 at SMAN 8 Malang in the academic year 2022/2023. The research instruments used are observation sheets and questionnaires. The data from the observation sheets describe the use of Whiteboard in German language learning.

In contrast, the data from the questionnaires are used to present students' responses to Whiteboard. Data analysis is conducted during and after the data collection process. Data analysis activities include data collection, reduction, presentation, and conclusion. The data collected from the observation sheets and questionnaires are then reduced, and the main points are summarised or sorted to focus on essential aspects. The next stage after data reduction is to display the data in narrative form. Subsequently, drawing conclusions and verification become the final stages in data analysis. Credible findings must be supported by solid and valid supporting evidence. Data validity checking is done using source triangulation. Source triangulation is performed by checking data obtained from multiple sources. This study compares the results of the researcher's observations with those of the observer and the students' questionnaires. In the final stage, these data results are consulted with the supervising lecturer.

RESULTS AND DISCUSSION

Whiteboard, as a supplementary learning tool, is employed in the German language class for 29 students in the 11th grade of IPA 5 at SMAN 8 Malang. Whiteboard is an interactive medium for delivering instructional content and facilitates collaboration with students through its features, allowing them to take notes collaboratively. This aligns with Rohani's perspective, which asserts

that instructional media serves as a tool to mediate the delivery of messages or materials during learning activities, and its diversity evolves in tandem with technological advancements [1].

The Use of Whiteboard as a Supplementary Learning Medium in German Language Instruction. The utilisation of the Whiteboard as a supplementary learning medium is divided into three parts: the initial activity, the core activity, and the concluding activity. According to the Lesson Implementation Plan, the learning activities occur in person at SMAN 8 Malang for 2x45 minutes. This study involves 29 students from the 11th-grade IPA 5 class as research subjects and three observers. Two students were absent due to illness and permission, making it impractical for them to attend school. The observers include the German language teacher at SMAN 8 Malang and two peers. During the research, the researcher takes on the role of the instructor, delivering and explaining the review material on the theme "Alltagleben" (Everyday Life – Food and Drink, Fashion and Clothing).

Based on the observation results in Table 1, it can be concluded that all three observers affirmed that the lesson was conducted on time. The researcher initiated the learning activity by greeting the students and inquiring about their well-being. The researcher reviewed the subtopics of the "Alltagsleben" material, comprising "Food and drink" and "Fashion and clothing", which would be used for the lesson. This was intended to help students recall previously learned material. Before this, the researcher asked about the Whiteboard. Some students responded that they were not familiar with the tool. Subsequently, the researcher provided instructions on using the Whiteboard to help the students use the tool during the lesson. According to Observer 01's notes, the instructions displayed were unclear to the students. This was due to the less conducive classroom conditions, preventing the researcher from interacting effectively with the students. Some students were late because they had just finished their religious activities. Before moving on to the main activity, the researcher ensured all students had a device (such as a smartphone or laptop) to access the Whiteboard.

Table 1 – Early Activities

No	Observed Aspect	Yes	No	Description
Early Activities				
1.	The lesson started on time.	01 02 03		
2.	The researcher introduced themselves, greeted the students, and inquired about their well-being.	01 02 03		
3.	Students responded to the greetings and inquiries from the researcher.	01 02 03		
4.	Students listened to the explanations about the key points of the theme "Everyday Life", which consists of " Food and Drink" and "Fashion and Clothing", as well as the instructions for using the Whiteboard provided by the researcher.	01 02 03		01 = The explanation of how to enter the Whiteboard is not clear enough

Notes: 01: Observer one; 02: Observer two;
03: Observer three

Table 2 – Early Activities (continuous.)

No	Observed Aspect	Yes	No	Description
Main Activity				
5.	Students form discussion groups consisting of 2-3 students before entering the Whiteboard.	01 02 03		01 = Some groups consist of 3-4 members.
6.	Students or group representatives do not encounter difficulty accessing the Whiteboard through the code provided by the researcher.	02 03	01	Students did not sufficiently understand 01= Initial instructions
7.	Students watch videos accessed through the barcode on the Whiteboard.	01 02 03		01 = Time constraints should be imposed.
8.	Students discuss within their groups to answer questions displayed on the Whiteboard.	01 02 03		
9.	Students answer questions provided on the Whiteboard.	01 02 03		
10.	Students are enthusiastic and not bored when using the Whiteboard.	01 02 03		01 = Learning is delightful
11.	Students experience difficulties in using the Whiteboard.	01	02 03	01 = The Whiteboard platform is

No	Observed Aspect	Yes	No	Description
				less optimal when used on mobile phones

Notes: 01: Observer one; 02: Observer two; 03: Observer three

During the main activity, the researcher instructs students to form discussion groups of 2-3 students, with each group accessing the Whiteboard using one device. This aligns with [9], stating that group learning can bring various elements to enliven the classroom atmosphere. The three observers say learning in discussion groups of 2-3 students is compelling. Observer 01 adds that some groups consist of 2-4 students. The researcher does not determine the selection of group members, allowing students to choose their groupmates freely. Subsequently, students access the "in the Restaurant" learning video from the Learn German YouTube account provided by the researcher through the barcode on the Whiteboard. Students then summarise the content of the accessed "in the Restaurant" instructional video. Students appear focused while watching the video; some engage in discussions to translate it into Indonesian. Based on the observation results, two observers indicate that students face no challenges accessing the Whiteboard through the code.

In contrast, one observer notes that students encounter difficulties entering due to a lack of understanding of initial instructions. Furthermore, all three observers state that students face no issues understanding the "in the Restaurant" video accessed through barcode scanning. The video is used to support listening comprehension or "Hören" skills.

The researcher also presented Alltagleben material on the Whiteboard. Students could view and take notes on the material using the student digital board feature. The researcher provided feedback through questions students had to answer directly using notes on their Whiteboards. Students actively engaged in learning through feedback activities. In line with this, the Whiteboard focuses more on optimising the students' whiteboard experience than solely on the teacher's Whiteboard [10].

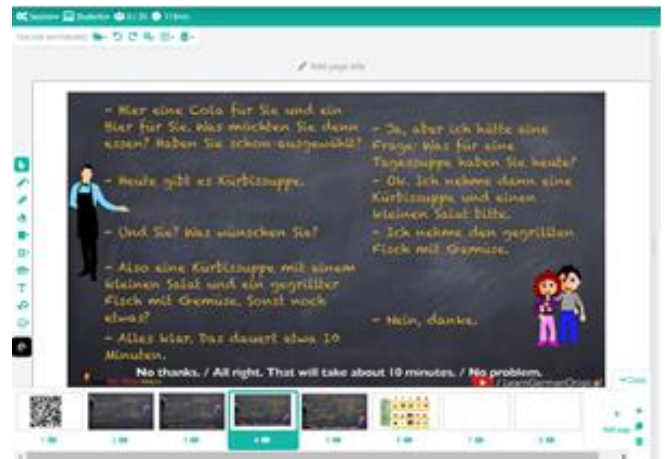


Figure 1 – Display of "in the Restaurant" Lesson Material

Students could write and read text presented on the Whiteboard to support their Writing and Reading skills. Students were actively involved in discussions to answer questions on the Whiteboard and showed enthusiasm when the researcher checked their knowledge through their answers. This is also supported by Snobl's opinion, stating that teachers can utilise the Whiteboard to assess students' knowledge through feedback statements or questions on the Whiteboard [5]. All three observers said students were enthusiastic and not bored while learning using the Whiteboard. Observer 01 also mentioned that the learning experience was delightful, although using the Whiteboard on mobile phones was less optimal. The research findings also indicate that students enthusiastically answered questions using the text input and draw features. Students could also use emoji features or input images to express their learning responses.

Based on the observation results in Table 3, it was found that all three observers agreed that the use of the Whiteboard had a positive impact, and students actively participated in the learning activity. Students conveyed their learning impressions on the Whiteboard platform in various ways, including sentences and through drawings and emoji reactions available in the features. When researchers asked students about their understanding of the material, students responded that they felt understood and could recall information about the previously discussed Everyday life (Food and drink, fashion and clothing) material. Using the Whiteboard, German language learning in the 11th-grade IPA 5 class at SMAN 8 Malang left a different impression than before.

Table 3 – End of Activity

No	Observed Aspect	Yes	No	Description
End of Activity				
11.	Students provided feedback on using the Whiteboard in today's learning session.	01 02 03		
12.	Students expressed a positive impression during the learning activity.	01 02 03		
Observer's Opinions (Lesson Plan and Suggestions)		01 = Implementation of Whiteboard is less suitable for offline learning and is more effective when accessed using a PC / Laptop.		

Notes: 01: Observer one; 02: Observer two; 03: Observer three

According to students' statements at the beginning of the learning activity, they had never used the Whiteboard as a learning tool in previous lessons, making them interested in using the Whiteboard. This statement aligns with [11], who states the benefits of instructional media include a) guiding teachers so that material presentation can be systematic to achieve learning objectives and b) students becoming more interested in learning and analysing the material presented by teachers [11]. The learning activities also proceeded as planned and on time, facilitated by the availability of a learning duration feature on the Whiteboard.

Students provided feedback on using the Whiteboard in today's learning session. Student responses were obtained from closed questionnaire sheets distributed at the end of the activity. The questionnaire was completed by 29 students participating in the learning activity. Subsequently, the researcher collected and presented the filled-out questionnaires in descriptive form.

Questions 1 and 2 inquire about students' knowledge and experience using Whiteboard as a learning tool. The survey results indicate that 28 students are unfamiliar with and have never used the Whiteboard in learning activities, de-

spite their frequent use of other internet-based digital media. Whiteboard is categorised as multimedia, relying on computers or the internet.

Table 4 – Student Responses

No	Question	Response Options	
		Yes	No
1	Have you previously been familiar with Whiteboard?	1	28
2	Have you previously used Whiteboard?	1	28
3	Did you face difficulties in accessing the Whiteboard?	11	18
4	Is the display of the Whiteboard attractive?	28	1
5	Does the Whiteboard have features that support learning?	28	1
6	Does the use of a Whiteboard make you bored?	24	5
7	Does using a Whiteboard bore you?	3	26
8	Is the Whiteboard efficient as a supplementary learning application?	23	6
9	Is the Whiteboard interesting to use as a learning medium?	26	3

This classification is supported by the views of [12], who classify instructional media as visual, audiovisual, video, multimedia, and reality media. Based on these findings, it can be concluded that Whiteboard is not widely utilised for internet-based learning processes, especially in German language instruction.

Question 2 addresses difficulties encountered when accessing Whiteboard. Eighteen students report no difficulty accessing the Whiteboard. This data suggests that most students do not experience issues accessing Whiteboard, even if they have not used it before. According to their responses, some students facing access challenges use their smartphones to access Whiteboard.

Question 4 pertains to the display features of the Whiteboard. Twenty-eight students expressed that the display on the Whiteboard was appealing, with features that supported learning. Students can collaborate to take notes or answer questions prepared by the teacher on the Whiteboard interface. In the subsequent questions, numbers 5 and 6, 28 students feel that the Whiteboard has features that support learning, and 24 students state that these features are easy to use.



Figure 2 – Student Opinions on Learning Using Whiteboard

Teachers can also directly monitor students' use of Whiteboard. This aligns with [5] assertion that a significant advantage for teachers using Whiteboard is the ability to track all students' work simultaneously. Based on this data, in addition to presenting visually appealing features that support learning, the features on the Whiteboard are also easily accessible to students.

The following questions pertain to the students' opinions after using the Whiteboard. In question number 7, 26 students stated that the use of the Whiteboard did not make the learning experience boring, and question number 8 indicated that the Whiteboard was able to cultivate interest in learning. This is supported by the responses of 26 students who answered "Yes" to whether using a Whiteboard can foster interest in learning.

Question number 8 is related to the efficiency of using Whiteboard to learn German. Twenty-three students expressed that the media is efficient for use in learning. Question number 10 is about students' opinions regarding the attractiveness of the Whiteboard as a learning tool. Twenty-six students stated that the Whiteboard is attractive for learning German. Based on this data, it can be concluded that Whiteboard is both efficient and engaging for learning activities. Learning using a Whiteboard is not just one-way; it involves feed-

back-based learning, preventing students from feeling bored. In line with [13], one way to increase students' interest and motivation is by using proper and attractive learning media. Based on the research findings, learning using a Whiteboard is relatively efficient as a supporting tool in German language education.

CONCLUSIONS

It can be concluded that using the Whiteboard in the German language class for 11th-grade IPA 5 students at SMAN 8 Malang has proceeded smoothly as planned. Initially, some students encountered difficulties using gadgets when first introduced to Whiteboard, but these issues were quickly resolved. The Alltagsleben material (Food and drink, fashion and clothing) was easily understandable for the students. The lessons were conducted punctually, and students actively listened to the material, engaging in discussions and responding to questions directly and through the Whiteboard. Students exhibited positive responses to using the Whiteboard despite having no prior experience with the platform. They expressed that the visually appealing interface of the Whiteboard, along with features like inserting text, pictures, or drawings, made it easy to enhance their notes. The collaborative concept of the Whiteboard, which allows teachers to provide feedback, was well-received by students, ensuring that the learning process remains engaging and fosters a sense of enthusiasm for learning.

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