Students' Preferences for Digital Teaching Materials in German Language Learning

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Abstract
This study aims to identify students' preferences toward digital learning materials in German language instruction and to explore the factors influencing their effectiveness. A descriptive quantitative approach was employed using a survey method. Data were collected through a questionnaire completed by 40 students from the German Language Education program who had previously used various types of digital learning materials in their coursework. The results indicate that the majority of students regularly use digital materials and exhibit positive preferences toward content that is visually appealing, interactive, easy to understand, and aligned with their language proficiency levels. The most frequently used materials include educational websites and instructional videos, while technologies based on Augmented Reality (AR) and Virtual Reality (VR) remain rarely utilized. Challenges identified include unstable internet connections, limited opportunities for practicing speaking and writing skills, and insufficient classification of materials by proficiency level. Students' preferences and experiences suggest that digital learning materials that are adaptive, contextual, and support all four language skills are more favored and perceived as effective in the learning process.

Keywords: *Digital learning materials, Student preferences, German language learning, interactive media, language skills*

Introduction

The development of digital technology has brought about major transformations in the world of education, including foreign language learning. Digital innovations have enabled learning systems to become more flexible, open, and interactive through the use of various devices such as laptops, tablets, and smartphones. This technology is considered capable of increasing student engagement, reducing academic stress, and enriching learning skills in general (Kotlyarova et al., 2021). In addition, digital learning materials are considered capable for facilitating the more personal learning experience, collaborative, and efficient which are in line with the dynamics of 21st century education. (Saputri et al., 2024).

One of the technology implementation in education is digital learning materials, such as a learning materials based on the electronic that provides text, audio, video, and animation. Compared to conventional learning materials such as printed books, the digital learning materials offer more advantages. According to Cognitive Theory of Multimedia Learning, learning is more effective if it is taught in a multimodal way, because it optimizes the use of verbal and visual memory (Mayer, n.d.). With a lot of variety learning source in the Internet such as videos and others, as well as the ease to access in everywhere, student can

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learn a language anytime and anywhere. (Nabila & Pujosusanto, 2021). Visual elements such as color, illustration, and even the virtual reality (VR) technology have been proven to increase student's attention and interest in learning. (Cao et al., 2023).

Today's students have a digital-native characteristics: familiarizing with an interaction based on technology, loving visual content dan interactive, and getting more comfortable with independent and flexible learning. In learning foreign language, providing communicative and authentic content is important, because they will be able to see how language is used for real life from the native speaker. (Zaitun Qamariah, 2023). In the foreign language learning context, their needs is more complex; not only understanding the structure of the language, but also applying the function of the language in real life.

Unfortunately, most of the previous studies have focused on the use of digital platforms such as Google Classroom and Zoom, (Arono et al., 2021), or online applications in general (Farika et al., 2024), without identifying the content and characteristics of those digital learning materials. In fact, content is the core of learning materials. The relevance of teaching materials, as explained by (Aloraini, 2012), depends on the content aligns with the needed of learning, real-life context, and the ability of the learners. Usually, the students are interested with the content that is communicative, easy to be understood, and having the interactive features such as quiz and simulation.

In this context, it is important to explore the student's preference with the digital learning materials, especially in the German language learning. Preference shows the cognitive and affective engagement with learning media, as well as be the main foundation for evaluating the usefulness of digital content. This study aims to examine which digital learning materials that most favored by students, explore the reasons behind that, asses the content suitability with the material and language level, as well as to find out the challenges faced during their use. The findings are expected to give contribution of the digital learning materials development that is more effective, contextual, and aligns with the needed of German language learning in digital era.

Method

This study employs a quantitative descriptive approach with a survey method that aims to obtain an overview of student preferences for digital teaching materials in German language learning. The quantitative approach was chosen to facilitate the collection of numerical data to identify patterns and tendencies of student preferences. The population in this study were students of the German Language Education study program who had used digital teaching materials in their lectures. The sample in this study was obtained using purposive sampling, namely students who had used several types of certain digital teaching materials that had been used before.

The instrument used in this study was a Google Form-based questionnaire designed using a 1-5 Likert scale to measure students' preferences regarding various aspects of digital teaching materials. The Likert scale used was adapted to the statements, namely a scale of agreement (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree) and a frequency scale that measures how often students use digital teaching materials in a week. This questionnaire covers several dimensions, including: 1) Selection of Digital Learning Materials, 2) Preferences for Digital Learning Material Content, 3) Challenges in Using Digital Learning Materials, and 4) Students' Opinions on Digital Learning Materials.

The collected data will be analyzed descriptively by calculating the percentage of answers given by respondents. The results of the analysis will be presented in the form of image and tables to provide a clear visual picture of students' tendencies towards digital learning

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materials. The results of this analysis will describe the level of students satisfaction with the use of digital learning materials and provide insight into elements that need to be improved in the development of German language learning media in the future.
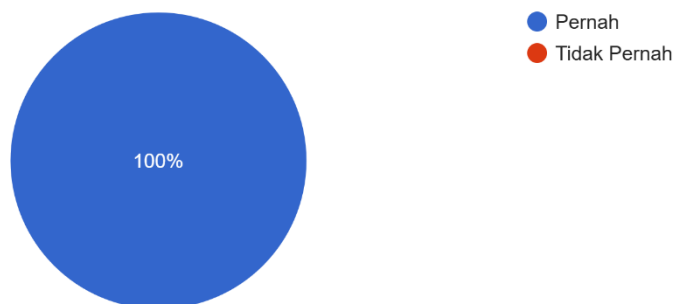
Results

Frekuensi penggunaan bahan ajar digital dalam seminggu
40 jawaban
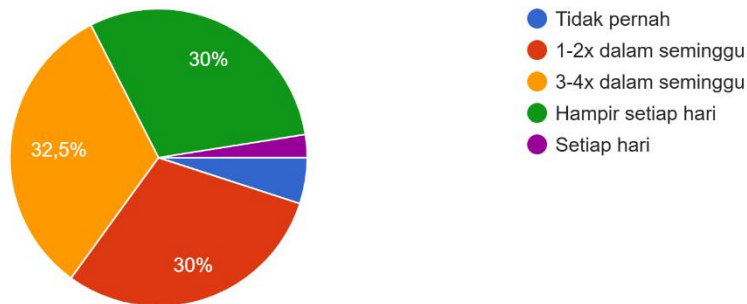
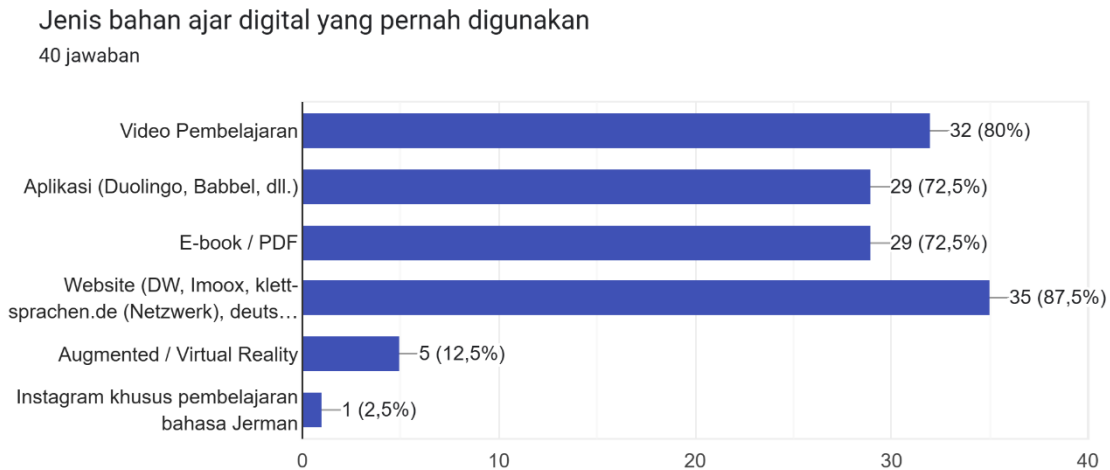Picture 1. Frequency of Use of Digital Teaching Materials

Based on data from 40 respondents, the frequency of using digital teaching materials in learning shows quite diverse variations. As many as 32.5% of respondents use digital teaching materials 3-4 times a week. The same percentage (30%) was also recorded in respondents who used it 1-2 times a week, as well as in those who accessed digital teaching materials almost every day. Meanwhile, only a small number of respondents used digital teaching materials every day (around 2.5%) and those who never used them at all (around 5%). These findings indicate that the majority of students use digital teaching materials routinely, although with varying intensity.

Apakah anda pernah menggunakan bahan ajar digital dalam pembelajaran bahasa Jerman?
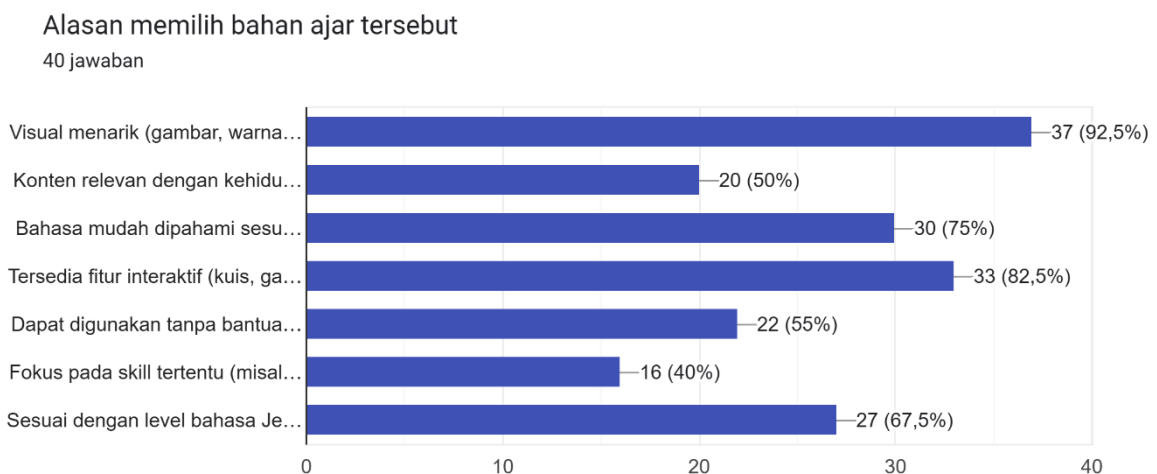40 jawaban

Picture 2. Use of Digital Teaching Materials by Respondents

Of the 40 respondents, all (100%) stated that they had used digital teaching materials in learning German. Not a single respondent answered "never." These results indicate that the use of digital teaching materials has become a familiar and common part of the German language learning process for students.

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Jenis bahan ajar digital yang pernah digunakan
40 jawaban

Video Pembelajaran	32 (80%)
Aplikasi (Duolingo, Babbel, dll.)	29 (72,5%)
E-book / PDF	29 (72,5%)
Website (DW, Imoox, klett-sprachen.de (Netzwerk), deuts…	35 (87,5%)
Augmented / Virtual Reality	5 (12,5%)
Instagram khusus pembelajaran bahasa Jerman	1 (2,5%)

Picture 3. Types of Digital Teaching Materials that have been used

Of the 40 respondents, the majority had used websites such a DW, Imoox, Klett, and similiar platforms, with a percentage of 87.5% (35 respondents). Another type of digital teaching material that is also quite often used is learning videos at 80% (32 respondents). Meanwhile, e-books or PDFs are used by 72.5% (29 respondents), as well as learning applications such as Duolingo or Babbel with the same percentage, namely 72.5% (29 respondents). The type of teaching material that is least used is Augmented Reality or Virtual Reality-based technology, only used by 12.5% (5 respondents) and social media such as Instagram which is specifically for learning German is only used by 2.5% (1 respondent). These data show that the most accessed digital teaching materials are those that are easy to access and practical, such as websites and learning videos.

Alasan memilih bahan ajar tersebut
40 jawaban

Visual menarik (gambar, warna…	37 (92,5%)
Konten relevan dengan kehidu…	20 (50%)
Bahasa mudah dipahami sesu…	30 (75%)
Tersedia fitur interaktif (kuis, ga…	33 (82,5%)
Dapat digunakan tanpa bantua…	22 (55%)
Fokus pada skill tertentu (misal…	16 (40%)
Sesuai dengan level bahasa Je…	27 (67,5%)

Picture 4. Reasons for Chosing Digital Teaching Materials

Most respondents chose digital teaching materials because of the attractive visuals, with a percentage of 92.5% (37 respondents). In addition, interactive features were also an important reason with a percentage 82.5% (33 respondents), followed by ease of

understanding the language according to ability level 75% (30 respondents), and suitability with the level of German being studied 67.5% (27 respondents). As many as 55% (22 respondents) chose digital teaching materials because they can be used without teacher assistance and as many as 50% (20 respondents) chose because the content is relevant to everyday life. Only 40% of respondents (16 people) chose teaching materials because they focus on certain skills such as speaking or writing. This shows that the visual and interactivity aspects are the main considerations in choosing digital teaching materials, in addition to ease of access and relevance of the content.

Table 1. Preferences for Digital Teaching Material Content

Aspect	Likert Scale				
	5	4	3	2	1
Challenges of Using Digital Teaching Materials					
It is difficult to find teaching materials that suit my language level		7,5%	37,5%	45%	10%
Internet connection interferes with access to digital teaching materials	32,5%	27,5%	25%	10%	5%
The appearance of the teaching materials is confusing or difficult to understand	5%		50%	35%	10%
The explanation of the material is not clear enough	5%	2,5%	37,5%	42,5%	12,5%
The learning materials offer limited practice in speaking and writing skills		22,5%	27,5%	35%	15%
I have difficulty when there is not direct guidance from the lecturer when accessing content	7,5%	12,5%	20%	47,5%	12,5%
The teaching materials do not include interactive features that support active engagement	2,5%	7,5%	35%	27,5%	27,5%

The table shows students' preferences for digital learning material content in German language learning, based on the results of a Likert scale questionnaire. Most students stated that the digital learning material content helped them understand the material thoroughly, with 57.5% of respondents agreeing and 25% strongly agreeing. In addition, the presentation of the material was considered interesting and not monotonous by 52.5% of respondents who agreed and 32.5% who strongly agreed. The language used in the learning material was also considered easy to understand and appropriate to the ability level of 65% of respondents who agreed and 20% who strongly agreed. The topics in the learning material were considered relevant to everyday experiences by 62.5% of respondents who agreed and 22.5% who strongly agreed.

As many as 42.5% of respondents agreed and 32.5% strongly agreed that the teaching materials were appropriate to their German language proficiency level (A1-B2), although 25% of respondents chose neutral. Meanwhile, 65% of respondents agreed and 15% strongly agreed that the teaching materials helped understand grammatical structures. The teaching

materials were also considered to provide examples and exercises that were relevant to the use of language in everyday life by 67.5% of respondents agreeing and 17.5% strongly agreeing. Visualization in the form of images, videos, or animations was considered to be able to increase focus and interest in learning by the majority of respondents (55% agreeing and 37.5% strongly agreeing). Finally, 90% of respondents (foreigners 45% agreeing and strongly agreeing) stated that they were more interested in learning if the teaching materials were presented in the form of a combination of text, images, videos, and audio. These findings indicate that students tend to prefer digital teaching materials that are visual, interactive, relevant, and tailored to their abilities.

Table 2. Challenges of Using Digital Teaching Materials

The table presents data on the challenges faced by students in using digital learning materials for German language learning. One of the main challenges is the difficulty in finding learning materials that are appropriate to their language level, with 37.5% of

Aspect	Likert Scale				
	5	4	3	2	1
Preferences for Digital Teaching Materials Content					
The content of the teaching materials helps to understand the material thoroughly	25%	57,5%	17,5%		
Presentation of material is interesting and not monotonous	32,5%	52,5%	15%		
The language used is easy to understand and appropriate to ability level	20%	65%	15%		
The topics are relevant to everyday experiences	22,5%	62,5%	15%		
Teaching materials according to my German language level (A1–B2)	32,5%	42,5%	25%		
Teaching materials help understand grammatical structures	15%	65%	17,5%	2,5%	
Teaching materials provide examples and exercises that help use German in everyday life	17,5%	67,5%	15%		
Visualization (pictures, videos, animations) increases focus and interest in learning	37,5%	55%	7,5%		
I more interested in learning if the content of the teaching material is presented with a combination of text, images, video and audio	45%	45%	7,5%		2,5%

respondents stating neutral and 45% stating disagreeing that this is not an obstacle, indicating that most students do not have too much difficulty in this regard. However, internet connection is a significant obstacle, with 32.5% of respondents strongly agreeing

and 27.5% agreeing that access to digital learning materials is often disrupted by the quality of the connection.

In addition, 50% of respondents felt that the appearance of the teaching materials was confusing or difficult to understand, although only 5% strongly agreed with the statement. The explanation of the material in the teaching materials was also felt to be unclear by some respondents, with 42.5% disagreeing and 37.5% being neutral. Another challenge is the lack of speaking or writing exercises provided in the digital teaching materials, where 35% of respondents were neutral and 22.5% strongly agreed that the exercises were inadequate.

As many as 47.5% of respondents stated that they disagreed that they experienced difficulties when there was no direct guidance from lecturers when accessing content, although there were still some (20%) who were neutral and 12.5% who agreed. Finally, the challenge regarding the lack of interactive features in digital teaching materials was also seen, where 35% of respondents were neutral and 27.5% stated that they disagreed that teaching materials did not include features that support active engagement. These findings indicate that although digital teaching materials have many advantages, technical constraints and content design remain challenges that need to be considered.

Open-ended questions in the questionnaire were provided to further explore students' opinions on the factors that make digital learning material effective in supporting German language learning. Based on the analysis of 40 responses, several dominant themes emerged.

1. Attractive and Innovative Visualization

Many respondents mentioned that the visually appealing design of digital learning materials is a major attraction. Colors, illustrations, videos, and modern user interfaces make the learning process feel less monotonous. One student wrote, "Attractive visuals (color harmony, illustrations, videos, and audio) along with easily understandable materials" greatly help in understanding German language content. An engaging visual presentation is also perceived as a factor that enhances learning motivation.

2. Interactive Features and Immediate Feedback

Features such as quizzes, educational games, simulations, and automated exercises that provide immediate feedback are highly appreciated by students. Many felt that these features make the learning process more enjoyable and effective. One respondents stated, "The automatic correction feature helps me quickly identify and fix my mistakes," while another mentioned, "Interactive features like games, quizzes, and simulations boost my motivation to learn."

3. Easy Access and Independent Learning

Flexibility in using digital learning materials was frequently highlighted as an important aspect. Students felt supported by resources that can be accessed anytime and anywhere, allowing them to set their own learning pace. Comments such as "Flexible, can be accessed anytime and anywhere" and "More freedom in managing learning pace and strategies according to personal need" reflect the significant value of accessibility in digital learning.

4. Relevance and Appropriateness to Proficiency Level

The effectiveness of digital learning materials is also influenced by how well the content matches students' proficiency levels. Several respondents emphasized the importance of relevant content that is neither too difficult not too easy. One response stated, "The material I used was just right, not too hard or to easy," highlighting the importance of designing materials based on language levels such as A2 or B1.

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5. Support for the Four Language Skills

Some students expressed the need for digital learning materials that support the development of all four essential language skills in foreign language learning: listening (hören), speaking (sprechen), reading (lesen), and writing (schreiben). Several respondents mentioned that a variety of practice formats and audio features greatly help them learn more comprehensively. One student remarked, "The audio features and direct exercuses make digital learning materials feel more engaging and alive."

From these answers, it can be concluded that students view digital teaching materials as effective learning tools if they have an attractive visual appearance, are easily accessible, interactive, suit their abilities, and support the development of the four language skills as a whole.

The next open-ended question was a question designed to explore students' perceptions regarding the suitability of digital learning materials with their German language proficiency level. Of the 40 responses analyzed, most respondents stated that the digital learning materials they used were appropriate for their language level, such as A2 or B1. Students felt that many digital learning materials today, such as Deutsche Welle, Duolingo, and the Easy German channel, provide structured materials based on CEFR competency levels, making it easier for them to choose the right learning resources.

A majority of respondents also demonstrated a high level of learning awareness, stating that they actively filter and select digital learning materials according to their personal proficiency levels. This indicates that the flexibility to choose the level of difficulty is considered one of the key advantages of digital learning resources. Some students noted that materials organized in a gradual manner, without mixing different proficiency levels, helped them understand the content more systematically.

In addition, additional features provided by digital teaching materials such as interactive exercises, level-appropriate vocabulary, and access to communication practice with native speakers are also seen as supporting factors that strengthen the suitability of the material to students' abilities.

However, not all responses were positive. Some students said that they sometimes found the material too difficult or too easy, which created obstacles in understanding the learning content. This confirms that although digital learning materials offer flexibility, more specific adjustments are still needed to meet diverse learning needs. In addition, there was also input regarding the need for content updates and offline access options to anticipate internet connection limitations.

Based on the overall responses, students indicated that digital learning materials are generally perceived as appropriate for their language proficiency level, provided that clear level options, well-organized content structure, and relevant supporting features are available. These findings highlight the importance of a differentiated approach in the development of digital learning materials to address learning needs more effectively and personally.

In general, it can be concluded that digital teaching materials have sufficiently supported language learning in accordance with students' proficiency levels, although the provision of content that is too general or lacks level classification remains a challenge for some learners. The findings indicate that students generally demonstrate a positive preference toward digital teaching materials in German language learning. This is reflected in the high

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frequency of use, with the majority of respondents using digital materials regularly each week, and all respondents (100%) reporting prior experience with them. The integration of digital tools in foreign language education has significantly improved accessibility and enabled more flexible and individualized learning (Melnyk et al., 2023).

Students' preferences for digital teaching materials are influenced by several key factors, including attractive visual design, interactive features, ease of understanding, and content appropriateness based on language level. This is supported by the finding that 93.1% of respondents cited visual appeal as a primary reason for their preference, and over 79% valued interactivity. Visual and interactive elements have been shown to enhance attention, memory retention, and learner engagement—particularly in online learning contexts that demand more dynamic experiences.

Most students reported that the digital teaching materials they use are adequately aligned with their language proficiency. This suggests that learners are capable of selecting materials appropriate to their level, either independently or through platforms that provide explicit CEFR-based level classifications. However, some challenges were noted, especially among beginner-level students, highlighting the importance of clear level differentiation. The effectiveness of teaching materials largely depends on the alignment between content difficulty and learner competence.

Technical and pendagogical challenges were also indentified in the study. Some students expressed concerns about unstable internet connections and the limited availability of speaking and writing exercises within the materials. Although most students were able to engage in independent learning without direct instructor support, the findings suggest that the functional aspect of digital teaching materials-specifically, the integration of all four language skills- requires further enchancement. Ideally, digital materials should not onlu be visually engaging but also facilitate the development of listening, speaking, reading, and writing skills, and provide meaningful feedback (Chatwattana, 2021).

Overall, this study reinforces the idea that digital teaching materials play a cruical role in foreign language education in the digital era. However, their affectiveness still depends on the quality of content design the integration of visual and linguistic elements, and their adaptability to diverse learner needs.

Discussion

The findings of this study indicate that students tend to have a positive preference for digital teaching materials in German language learning due to their attractive visual elements, interaktive features, and content suitability with their language proficiency levels. Visual components such as color, images, and multimedia elements have been shown to enhance focus and learning motivation, in line with the principles of the Cignitive Theory of Multimedia Learning (Mayer, n.d.). Digital teaching materials are also considered to support the understanding of grammatical structures (Linguistic function) and the application of language in real life context (functional function). Student`s preferences are further influenced by topic relevance, communicative content delivery, and the classification of materials based on CEFR levels, which enables them to select appropriate resources. Nevertheless, challenges such a limited speaking and writing practice, as well as

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internet connectivity issues, remain, indicating the need for further development of teaching materials that are more comprehensive and responsive to learner`s diverse needs.

Conclussion

This study concluded that digital teaching materials are considered affective and preferred by students due to their attractive design, interaktivity, accessibility, and alignment with students language proficiency levels. Teaching materials that incorporate visual elements, contextual content, and level based classification are perceived to enchance both motivation and learning outcomes. Nevertheless, digital teaching materials need continous development to comprehensively support all four language skills and to provide content that is flexible, relevant, and responsive to both technical and pendagogical challenges.

Limitations of the Study

This study used purposive sampling with the population consisting of all students enrolled in the German Language Education study program. However, the majority of respondents who completed the questionnaire were from semesters 4 and 6. This may affect the generalization of the research findings because not all semesters are proportionally represented.

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