

Transformation of the Indonesian Language Game (GABIN) Digital Assessment for Evaluating Class V Elementary Students' Paragraph Comprehension

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Abstract

Purpose: This research aims to develop a Digital Assessment of Indonesian Language Games (GABIN) to evaluate paragraph comprehension among fifth-grade students.

Methodology: A qualitative Research and Development (R&D) approach was employed using the ADDIE model, focusing on the Analysis, Design, and Development stages. The research subjects were fifth-grade students at Muhammadiyah Special Program Kottabarat Elementary School. Data collection techniques included observation, interviews, and documentation.

Results: The research resulted in a gamification-based learning evaluation tool (GABIN) designed to assess paragraph comprehension. The tool was validated as "very feasible" by both media experts and educational assessment experts, each awarding a score of 87.5%. These findings support the conclusion that the GABIN assessment tool is highly suitable for evaluating paragraph comprehension skills in grade V students.

Applications/Originality/Value: This study demonstrates the integration of gamification into educational assessment and contributes a novel digital tool for Indonesian language instruction. GABIN offers a user-friendly, engaging alternative for measuring students' reading comprehension in the classroom context, especially in upper elementary levels.

Introduction

In today's digital era, the advancement of information technology has brought significant changes across various fields, including education. Technology should be used in education in the 21st century to produce a more engaging and productive learning environment. Creating assessments that objectively measure learning outcomes and inspire students to actively participate in the learning process is one of the biggest difficulties facing the education sector. Assessment, according to (Padmadewi et al., 2022), is an ongoing process of collecting data on students' progress that is taken into account when deciding on their learning goals and progress. According to (Monroe et al., 2019), evaluation is essential and a useful tool for assessing the effectiveness of the learning process. Teachers also use assessment to determine how well the continuous learning environment is working (Huber & Helm, 2020). Based on what students have learned during the evaluation process, teachers can also provide comments (Palmberg et al., 2024). Despite their continued dominance in classrooms, traditional exams often lack interest and marginalize student participation in the evaluation process. According to Putri et al. (2023), students often experience stress and anxiety as a result of traditional evaluations such as written exams, which can lead to results that do not always accurately reflect their understanding. Students' low motivation to participate in the learning process is often attributed to difficulties in learning Indonesian, especially in terms of boring and inflexible evaluation tasks (Khoiruman, 2021).

This suggests that more creative and participatory assessment methods are needed. Using educational games as an assessment tool is one of the solutions. Besides attracting students' attention, game-based exams offer more detailed and fun feedback (Praptomo et al., 2022). Digital games are used in game-based learning to teach content and measure student understanding. As games provide an engaging and dynamic experience, they can increase student motivation in the classroom (Dhiya Rahma et al., 2024). According to Bai et al. (2020), game-based evaluation provides a more dynamic and engaging learning experience for students. In addition to answering questions, students take part in games intended to evaluate their understanding of the subject matter in real time. Students using digital game-based evaluation, for example, showed greater motivation and willingness to learn than students assessed with traditional techniques, according to Sukmayadi and Yahya's (2020) research. Through the use of games, the evaluation component can also be integrated with a feedback element that can be directly accessed by students after completing the task, thus strengthening the experiential learning process. As a result, the use of games in Indonesian language learning is expected to increase student engagement and maximize their language comprehension.

The impact of the digital revolution has led to significant changes in education systems around the world. These technological advances have impacted learning evaluation methods, sometimes referred to as assessment, in almost all aspects of education. In recent years, many educational institutions have adopted digital evaluation, especially during the COVID-19 epidemic when distance learning became essential (Ahmad, 2020). Improving the effectiveness, accuracy and relevance of student learning outcomes evaluation is the goal of digital assessment. Digital evaluation enables more responsive educational modifications by accelerating the real-time data collection process and providing instant feedback to teachers and students (Mohamed Hashim et al., 2022). The format, content and difficulty level of digital exams can be changed to suit the needs and skills of each student, allowing for a more individualized approach to learning. As technology advances, digital exams make it easier to use more interactive assessment techniques such as instructional games, adaptive assessments and video-based simulations. Therefore, exams are now an important component of a more holistic and dynamic learning process, rather than just a formal assessment tool (Kusumandaru & Rahmawati, 2022).

An important component of learning Indonesian in primary school is understanding the information contained in paragraphs. This understanding includes the ability to identify the structure of the paragraph, determine the main idea, and make connections between sentences. These skills are important because they help students develop their literacy skills in reading, writing and communicating (Anggreae, 2022). Research shows that students who have a strong understanding of paragraph form are more likely to write in an organized way, read more deeply, and communicate more effectively. Despite this, many students still struggle with paragraph comprehension, often unable to distinguish the main sentence, supporting sentences, and the logical connections between sentences, among other paragraph components (Nurkumalasari & Sukarni, 2022). According to studies by Oktafiani and Irawan (2021), most students still have trouble correctly reading paragraph texts. Their entire understanding of the reading material is impacted by this challenge. Therefore, in order to maximize students' literacy skills, it is essential to create instructional strategies that can assist them better understand the structure and content of paragraphs

Based on observations and interviews with class V Indonesian language teachers at Muhammadiyah Elementary School Special Program Kottabarat, it was found that students' lack of interest in paying attention to Indonesian language lessons is often related to their lack of enthusiasm for participating in the learning process. Many students consider Indonesian as a subject that is boring because it is often delivered monotonously through lecture methods. As a result, not a few students lose focus and prefer to play by themselves. To address this issue, teachers use learning media such as videos, films, or stories containing interesting messages. According to the teachers, the use of visual or digital video-based learning media can increase student concentration. Specifically for paragraph material learning, the method used by the teacher involves conventional games utilizing several sheets of paper, each containing one sentence. Students are asked to develop these sentences into a paragraph and determine the main idea and supporting ideas. In the assessment process of paragraph material, teachers still apply conventional methods, such as completing tasks in the book. However, teachers have tried implementing digital assessments several times. According to them, digital assessments facilitate teachers in correcting answers and can encourage students to achieve high scores. Despite this, teachers feel a drawback when using digital assessments, as students' writing skills become less honed, and many students do not read the questions seriously, instead randomly choosing answers.

From the background outlined above, the purpose of this study is to develop a digital assessment through interactive game media, namely the Indonesian Language Game (GABIN), as an innovative effort to evaluate paragraph material comprehension in a more enjoyable way. Thus, the use of games in learning the Indonesian language is expected to help increase student engagement and optimize their understanding of paragraph material, providing a positive contribution to the development of Indonesian language learning in class V, especially in facing the challenges of the digital era.

Method

This study used the Research and Development (R&D) method. The ADDIE model proposed by Reiser and Mollenda was used, referring to five main stages in the learning program development process: Analysis is a research process that begins with an analysis of the problems faced, Design is designing products to provide solutions to existing problems, Development is producing and validating products, Implementation is applying products that have been developed into the environment to obtain initial data on their effectiveness and Evaluation is assessing the quality and success of the product. This study presented the Analysis, Design, and Development phases. The formula for calculating the percentage of feasibility:

$$P = \frac{\sum x}{\sum x_i} \times 100\% \quad (1)$$

Information:

P = Eligibility percentage

$\sum x$ = Total score obtained

$\sum x_i$ = Highest score total

In the product feasibility stage, the assessment process is similar, thus a high score indicates that the product from the validation has a good and high feasibility level. The validation decision-making criteria are as follows:

Table 1. Validity categories

Percentage	Category
80% - 100%	Highly feasible
60% - 79.99%	Feasible
50% - 59.99%	Somewhat feasible
0% - 49.99%	Not feasible

The subjects of this study were class V students at Muhammadiyah Elementary School Special Program Kottabarat. Additionally, Indonesian language teachers also played a role as informants in this research. The data collection technique used by the researcher were observation, interview, and documentation.

Data analysis in this study was carried out analysis models as proposed by Miles & Huberman or Spradley, which include the processes of data reduction, data display, and conclusion drawing. In developmental research, the use of both quantitative and qualitative data analysis techniques is crucial to ensure the validity of the data through source and method triangulation.

Result and Discussion

The Indonesian Language Game (GABIN) was designed as an interactive digital assessment tool that incorporates learning with gamification for evaluating paragraph comprehension among class V elementary students. The GABIN design focuses on three main components: user interface, content of questions, and technology integration.

Analysis. Muhammadiyah Elementary School Special Program Kottabarat has implemented digital assessment technology by teachers as part of the learning process. According to Mrs. Y, an Indonesian language teacher, “the use of digital technology, such as displaying videos or games, can arouse enthusiasm, curiosity, and increase student focus” (W/Y, September 24, 2024). This is also reinforced by a student's statement: “Yes, I feel more enthusiastic during learning sessions when watching videos and playing games” (W/S, September 24, 2024). Furthermore, Mrs. Y also expressed, “The use of digital media greatly assists in delivering material and lightens the burden when correcting. However, there is a concern that the application of media and digital assessments may reduce students' writing skills,” she continued (W/Y, September 24, 2024). The teacher explained that this occurs because students' attention is more focused on visuals such as images, colors, and shapes displayed in digital media than on the content material. “Therefore, we feel it is necessary to schedule the use of digital media so that students do not get bored with the same methods used repeatedly,” she added (W/Y, September 24, 2024). In class V lessons on main ideas and supporting ideas in paragraph texts, the methods used by teachers are still conventional, based on the teaching modules that have been prepared (D/, August 12, 2024), such as using sheets of paper containing sentences that students must develop into a complete paragraph and determine the main and supporting ideas. Teachers also apply discussion methods using a “voice board,” where students are asked to write down the main ideas and supporting details from the paragraph displayed on the projector screen. In the assessment of paragraph material, teachers still use a conventional approach based on the tasks found in the textbook (D/, August 12, 2024). Based on this needs analysis, it is crucial to develop a digital assessment that can accommodate Indonesian language skills including listening, reading, viewing, and writing, in accordance with the Merdeka curriculum. Therefore, a digital assessment designed as a practice medium for students to hone their critical thinking skills in understanding paragraph material is necessary. nly two levels of headings should be numbered. Lower level headings remain unnumbered; they are formatted as run-in headings.

Design. The design phase involves planning and developing educational media, which includes preparing teaching materials, designing learning media according to the selected material, and creating the planned learning media designs. In the design planning stage of the Indonesian Language Game (GABIN), the focus is on three main components: display, content of questions, and technology integration.

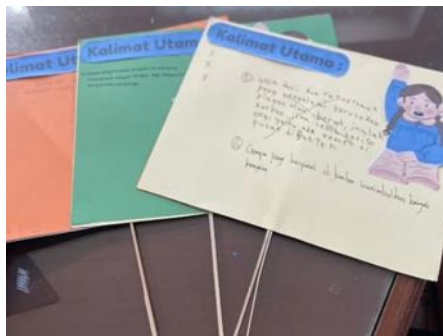


Figure 1. Voice board media

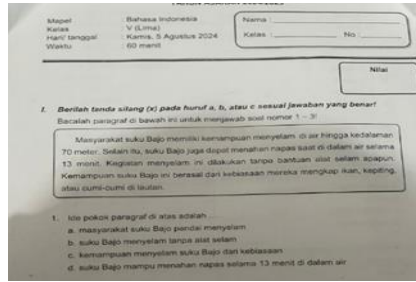


Figure 2. Assessmentss

Display. The GABIN digital assessment is designed for easy access with two screen size options, namely the smartphone version and the laptop version, to suit the needs and preferences of students. This digital assessment design includes various essential elements, such as a homepage containing the title, a Quiz Time page, learning outcomes and objectives, usage instructions, question items, and the author's biodata. All these components are packaged with characters and visual designs that appeal to the characteristics of elementary school students. On the homepage, there is the title “GABIN: Digital Indonesian Language Game-Based Assessment for Elementary School Children,” complemented by the slogan, “Every Page is a New Adventure.” Additionally, this page displays an image of three children sitting on alphabet dice while holding a trophy. This image has a symbolic meaning, where the dice represent the gaming element in GABIN, while the alphabet letters represent the Indonesian language learning material. The visuals are designed to help students more easily associate the gaming elements with the learning material. At the bottom of the page, there is a “Next” button that functions to guide students to the next page. The easy-to-understand navigation design is expected to provide an interactive, enjoyable, and meaningful learning experience for elementary school students contribution should contain no more than four levels of headings.



Figure 3. Cover



Figure 4. Quiz time

CAPAIAN PEMBELAJARAN

Peserta didik mampu membaca kata-kata dengan berbagai pola kombinasi huruf dengan fasih dan indah serta memahami informasi dan kosakata baru yang memiliki makna denotatif, konotatif, dan kiasan untuk mengidentifikasi objek, fenomena, dan karakter. Peserta didik mampu mengidentifikasi ide pokok dari teks deskripsi, narasi dan eksposisi, serta nilai-nilai yang terkandung dalam teks sastra (prosa dan puisi) dari teks dan/atau audio/visual.

TUJUAN PEMBELAJARAN

1. Melalui penugasan peserta didik dapat mengidentifikasi ide pokok dan ide pendukung setiap paragraf dengan tepat
2. Melalui diskusi peserta didik dapat mengidentifikasi ide pokok dalam sebuah paragraf dengan langkah-langkah yang tepat

Figure 5. Learning outcomes

PETUNJUK

1. Jawab pertanyaan dengan benar
2. Pencet tombol A, B, C atau D pada jawaban benar
3. Menangkan quiz

SEMANGAT MENGERJAKAN

Figure 6. instructions

04 MEMBACA

Olahragawan mencari tempat pending untuk keolahragaan. Dengan berolahraga, kita dapat meningkatkan daya tahan tubuh dan menjaga berat badan ideal. Selain itu, olahraga juga dapat membantu mengurangi stres dan meningkatkan suasana hati. Banyak jenis olahraga yang bisa dipilih, seperti lari, bersepeda, atau berenang. Oleh karena itu, penting bagi kita untuk mengalokasikan waktu berolahraga setiap minggu.

Kalimat utama dari teks bacaan diatas adalah...

A. Olahraga adalah bentuk senam untuk keolahragaan.
 B. Olahraga juga dapat membantu menurunkan stress dan meningkatkan suasana hati.
 C. Banyak jenis olahraga yang bisa dipilih, seperti lari, bersepeda, atau berenang.
 D. Penting bagi kita untuk mengalokasikan waktu berolahraga setiap minggu.

Figure 7. Questions

Biodata Penulis

Anisa Krotami merupakan mahasiswa (strata satu) Program Studi Pendidikan Guru Sekolah Dasar PGSD Universitas Muhammadiyah Surakarta. Saat ini menempuh semester tujuh. Pendidikan terakhir yang telah diselesaikan yaitu sekolah menengah di SMA Negeri Barat.

Dr. Ribi Puji Rahmawati, S.Pd., M.Hum., M.Pd. merupakan Kaprodi Program Studi PGSD UMS.

Kepakaran penulis yaitu pada bidang Pendidikan Bahasa Indonesia. Adapun karya ilmiah penulis dapat dicek pada berikut:

<http://ojs.umsida.ac.id/index.php/ajournal>

Figure 8. Author's biodata

Content of Question. The GABIN Assessment utilizes a multiple-choice format incorporating Higher Order Thinking Skills (HOTS) in line with the teaching module prepared by teachers. The material tested includes main ideas and supporting ideas within paragraph texts. The questions are structured based on the cognitive domains of Bloom's Taxonomy, specifically at the Analysis (C4) and Evaluation (C5) levels, designed to train students' critical thinking abilities. There are 5 questions that students must complete, with each question designed to test various language skills. For example, one question may test students to read and understand a narrative text; another may be video-based and require listening skills; and a third may ask students to summarize a written response. This method seeks to provide appropriate challenges for students' higher-order thinking skills while assessing their overall language skills.

Technology Integration. The GABIN assessment is a form of digital assessment packaged in the form of multiple choice games without time limits or access restrictions, so students can try the questions given many times until they find the correct answer. Students can improve their critical thinking skills by using GABIN to understand the core concepts of paragraphs and their supporting elements. The Canva application was used to create the GABIN assessment. GABIN can be accessed through links and QR codes that teachers can share or display on the projector screen to incorporate technology into the GABIN assessment plan. Users can navigate to the next page by clicking the "Next" button on each page. Additional features designed in the GABIN assessment include: 1) text-based questions containing paragraphs to assess reading skills; 2) video-based questions to assess visual language skills; 3) essay questions to evaluate writing skills; 4) audio-based questions to test listening skills. Once a question is answered, students can immediately see whether their response is correct or incorrect.

Instructions for Using the Indonesian Language Game (GABIN) Digital Assessment on Paragraph Material:

- 1) Get the QR code or Click next when the quiz time display appears
- 2) Click next after reading the learning objectives and outcomes.
- 3) Click next after reading the directions for finishing the online GABIN test.
- 4) As directed, give thoughtful answers to the questions.
- 5) Select the response you think is right, then move on to the next.
- 6) The author's biodata display will appear after all questions have been addressed.

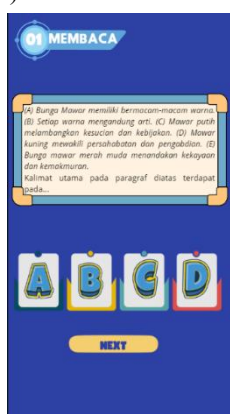


Figure 9. Reading question

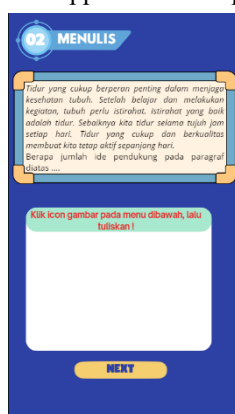


Figure 10. Writing question



Figure 11. Viewing Question

There are some notable distinctions between the GABIN exam and traditional evaluation methods for learning Indonesian. Because the GABIN exam has questions in a variety of formats, it takes a more engaging and enjoyable approach. Students become more eager and driven to learn as a result. Students are less enthusiastic or even feel under pressure when it comes to traditional evaluation, which typically takes the form of written tests. Additionally, GABIN exams are made to foster critical thinking in pupils through engaging exercises that develop their creativity and analytical abilities, such writing paragraphs or identifying the key concept. Conventional examinations, on the other hand, also gauge critical thinking abilities, but they typically involve essay questions, which, despite their depth, many students find uninteresting. Because the GABIN assessment is less biased and takes less time, it performs exceptionally well in terms of efficiency. But in order to use it, you need technology like computers or tablets. Conventional evaluation, on the other hand, is simpler to complete without technology, but it takes longer and occasionally yields subjective conclusions. GABIN tests are also more adaptable since they include text, image, and sound components to accommodate students' various learning preferences, including visual, kinesthetic, and aural. Conversely, pupils with verbal or text-based learning styles are more suited for traditional tests. Nevertheless, GABIN necessitates an upfront investment for its creation, while traditional assessments are more economical and simpler to apply under different circumstances.

Development. The feasibility test for the GABIN assessment development was conducted by experts in media and learning evaluation, identified by the initials AA and DS respectively. The data obtained from these experts are as follows:

Table 2. Media expert feasibility

Media Feasible Aspect	Obtained Score	Maximum Score
Ease of user navigation through game features and menus.	4	4
Appropriateness of button and icon placement.	4	4
Accuracy of visual elements layout that is easy on the eyes and not confusing.	4	4
Level of interaction in the game that actively involves users, not just as receivers of information.	3	4
Appropriateness of animation and visual effects use.	4	4
Quality of feedback on user responses or actions in the game, visually, audibly, and textually.	3	4
Quality of graphics used.	3	4
A color combination that supports learning without distracting focus.	4	4
Clarity and readability of text, such as font type, size, and color support reading comfort.	3	4
Originality quality of images and graphics.	3	4
Total	35	40
Feasibility Percentage	87.5%	100%
Criteria	Highly feasible for use	

The GABIN assessment, which was created by the researchers, is very likely to be used as an evaluation instrument to gauge the degree of comprehension of paragraph material in class V, according to the results of the validation survey mentioned above. A score of 35, or 87.5%, was attained. Based on media metrics that meet the relevant requirements, this score represents the viability of the media.

Media Feasible Aspect	Obtained Score	Maximum Score
Accuracy and novelty of information presented in the game.	3	4
How well the material supports the targeted learning objectives.	4	4
Whether the content is understandable and engaging for the target age group.	4	4
The level of appropriateness of questions or tasks to the competency indicators measured.	2	4
Presence of a variety of question formats.	4	4
GABIN assessment's ability to enhance students' understanding of paragraph texts.	4	4
GABIN assessment's stimulation of critical thinking through the questions presented.	3	4
GABIN assessment aids in enhancing students' vocabulary and its meanings.	4	4
Total	28	32
Feasibility Percentage	87.5 %	100%
Criteria	Highly feasible for use	

The GABIN assessment, which was created by the researchers, is very likely to be used as an evaluation instrument to gauge the degree of comprehension of paragraph material in class V, according to the results of the validation survey mentioned above. The result is a score of 28 or 87.5%. This indicates the feasibility of the media based on the language and learning evaluation indicators. Therefore, it can be concluded from both sets of validation data that the GABIN evaluation is "Highly Feasible" in terms of design and content.

Compared to traditional evaluation techniques, the benefits of implementing the GABIN Assessment show that students can quickly identify the main concept and supporting ideas in the content of the paragraph. This is due to GABIN's gamification strategy, which aims to increase students' interest and facilitate their understanding of important ideas. Students participate in interactive tasks in this game-based evaluation, such as selecting sentences that support the main idea or creating logically structured paragraphs, which directly tests their analytical skills in a fun and stress-free environment. These tasks can also be completed more quickly thanks to the auto-evaluation feature that provides quick feedback to students. If students know the results immediately, they can correct their mistakes next time without having to wait for the teacher to grade them manually.

Additionally, the GABIN assessment demonstrates that students are able to write the problem's primary idea and supporting ideas using a variety of media, including visual, aural, and audiovisual. This illustrates how well GABIN can adjust to the various learning styles of its students. Questions presented in the form of text or visuals help children who learn best visually comprehend the information in the paragraphs. However, students who prefer audio learning benefit from audio elements like narration, which reads out the question or paragraph's content. Additionally, presenting questions in an audiovisual format—which blends text, images, and sound—offers a richer and more thorough learning experience, assisting students in comprehending the main topic more deeply the main idea and supporting ideas.

For the GABIN exam to run smoothly and offer the greatest learning benefits, schools should set up accessible supporting materials including computers, tablets, and smartphones. Additionally, it should be ensured that there is a dependable internet connection or that tools or software are downloaded before to the test. In the event that access to technology is restricted, the exam can be utilized in alternative ways. Students should learn how to use technology for learning from their teachers as well. Teachers should also supervise if students have difficulty accessing and answering the questions in the GABIN Assessment.

Digital assessment is a key motivator for significant improvement and represents a huge digital shift in the assessment methods of education systems around the world. More pupils, including those in remote locations or with special needs, can use adaptive evaluation techniques thanks to digital exams. This research and development have led to the innovation of a gamification-based digital assessment in the form of GABIN, making the learning evaluation process enjoyable. The GABIN assessment contains evaluation questions on paragraph material for class V, meeting the language skills of the students. The goal of the GABIN assessment is to develop a digital assessment through interactive game media, as an innovative effort to evaluate paragraph comprehension more enjoyably for elementary school class V.

The GABIN assessment can be accessed via a barcode or a link, which will facilitate students to access the assignments anytime and anywhere through a mobile phone or computer screen. This learning media is inspired by an article written by (Khoiruman, 2021), who in his research discussed the challenges faced in learning the Indonesian language, often related to the low interest of learners in participating in the learning process, particularly in evaluation activities that tend to be monotonous and rigid. Moreover, observations and interviews have concluded that elementary school-aged students feel happier, more enthusiastic, and more motivated when learning integrates technology as both a medium and an evaluation tool. However, this also raises concerns among teachers about the potential decline in students' writing skills if digital media and assessments are implemented too frequently.

The GABIN assessment design was inspired by the article by (Juliasih et al., 2023), which focused on a digital reading comprehension assessment centered solely around reading activities and students' reading skills enhanced with visual animations. In contrast, the media developed in this study is a digital assessment that encompasses several language skills: reading, writing, listening, and viewing. Additionally, GABIN is equipped with animations that motivate students to learn, using phrases like “spirit,” “awesome,” “good job,” and “give up.” This approach is supported by (Hanif, 2020), who stated that integrating animated media allows students to effectively recognize and develop new knowledge to the fullest because the material directly connects with their basic knowledge and everyday experiences. In the GABIN assessment, questions are designed in multiple-choice and essay formats.

Based on the validation data from media experts and learning & linguistic evaluation, it can be concluded that the GABIN assessment is feasible for implementation in learning environments, requiring improvement in the sound aspect. The GABIN assessment is highly feasible for use because it enhances students' understanding of paragraph texts, stimulates critical thinking through the questions presented, and helps improve understanding of vocabulary and its meanings. This Indonesian language learning media is designed to make it easier for students to study Indonesian language material and can be used multiple times. This innovation in media is appealing to students and can be repeatedly used, thus saving paper use, as discussed in the study by (Khoirurrohman & Irma, 2021). Meanwhile, research by (Hidayat et al., 2023) shows that the use of media in the learning process can help students to better understand language lessons, increase interest, and make students more active in learning activities.

Conclusion

The GABIN assessment was researched and developed in grade V of SD Muhammadiyah Special Program Kottabarat. The analysis phase revealed that teachers needed a digital assessment tool to help students assess their understanding of paragraph content by incorporating language skills, particularly writing. Based on these findings, the GABIN assessment was created, and then refined by including various types of questions that correspond to language

skills. through the feasibility test, GABIN was declared “very feasible” through the feasibility test conducted by media experts with a score of 87.5% and learning evaluators getting a score of 87.5%. so as a result, GABIN can be used as an instrument for assessing understanding of paragraph content in grade V.

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