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iSPRING SUITE: A SMARTPHONE APPLICATION-BASED TEST FOR INDONESIAN LANGUAGE SUBJECTS IN ELEMENTARY SCHOOL

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Abstract
This research aims to develop a smartphone-based digital test using iSpring Suite software for Indonesian Language lessons in elementary schools. The background of this research is the limited evaluation media used by teachers, which are still predominantly paper-based. The study used a research and development method with the ADDIE model, which includes the stages of analysis, design, development, implementation, and evaluation. The resulting product is an interactive test application designed to facilitate teacher assessment and provide a more engaging learning experience for students. The research was conducted in a fifth-grade class at Wajageseng Elementary School with 37 students. The instruments used included a media expert validation sheet, a material expert validation sheet, and a student response questionnaire. The media expert validation results showed a score of 86.67%, categorized as very appropriate, the material expert validation results scored 72%, and the student response results reached 86.40%, categorized as very good.

Keywords: digital test, iSpring Suite, smartphone app, evaluation tool

Abstrak. Penelitian ini bertujuan untuk mengembangkan tes digital berbasis *smartphone* menggunakan perangkat lunak *iSpring Suite* pada mata pelajaran Bahasa Indonesia di sekolah dasar. Latar belakang penelitian ini adalah terbatasnya media evaluasi yang digunakan guru, yang masih dominan berbasis kertas (*paper-based test*). Penelitian ini menggunakan metode penelitian dan pengembangan dengan model ADDIE yang meliputi tahap analisis, desain, pengembangan, implementasi, dan evaluasi. Produk yang dihasilkan berupa aplikasi tes interaktif yang dirancang untuk mempermudah guru dalam penilaian serta memberikan pengalaman belajar yang lebih menarik bagi peserta didik. Penelitian dilaksanakan di kelas V SDN Wajageseng dengan jumlah peserta didik sebanyak 37 orang. Instrumen yang digunakan meliputi lembar validasi ahli media, lembar validasi ahli materi, dan angket respon peserta didik. Hasil validasi ahli media menunjukkan skor 86,67% dengan kategori sangat layak, validasi ahli materi memperoleh skor 72% dengan kategori layak, sedangkan respon peserta didik mencapai 86,40% dengan kategori sangat baik.

Kata-kata Kunci : tes digital, *iSpring Suite*, aplikasi *smartphone*, alat evaluasi

Background

Learning evaluation is a crucial aspect of measuring students' understanding because it provides a comprehensive overview of learning achievements and supports teachers in improving the quality of instruction (Magdalena et al., 2023). However, evaluation methods in elementary schools are still predominantly dominated by conventional paper-based tests, which present various limitations, including low student engagement, a high potential for cheating, and an increased workload for teachers due to manual correction. In addition, the lack of variation in evaluation techniques causes students to become easily bored, less motivated, and experience difficulties in understanding conventional-form questions (Admaja et al., 2019).

These limitations indicate the need for innovation in assessment systems that are more efficient, interactive, and capable of attracting students' interest (Magdalena et al., 2020). One potential solution is the integration of technology in learning evaluation, as demonstrated by the implementation of the National Computer-Based Assessment (ANBK). Technology enables more varied evaluation processes, provides immediate feedback, and accelerates the processing of results (Admaja et al., 2019). Furthermore, Maritasari et al. (2023) confirm that the use of digital applications in learning media development can enhance students' understanding of learning materials, indicating that technology holds significant potential in the field of learning evaluation.

One software that can be utilized for this purpose is iSpring Suite, an authoring tool that supports the development of interactive digital tests. This application offers various question types, automatic scoring, and instant feedback, which assist students in recognizing their mistakes. Jaya and Magdalena (2024) reported that the use of iSpring Suite in developing smartphone-based online tests in elementary schools received positive responses from students and was rated as highly feasible by experts, with feasibility scores

of 87% from subject-matter experts and 90% from media experts. These findings indicate that application-based evaluations can increase students' motivation and engagement in the learning process.

Nevertheless, the utilization of smartphones to support evaluation activities in elementary schools remains suboptimal. Azzahra et al. (2025) highlight that digital technology can enrich evaluation methods, provide more interactive learning experiences, deliver real-time feedback, and be implemented flexibly. Although digitalization increases the accessibility of learning materials, resources, and online communication between students and teachers, it also presents challenges that must be addressed to ensure that learning remains effective (Ari Masyhuri, 2024).

According to Cahyani et al. (2022), iSpring Suite has also been used in developing digital learning media such as electronic student worksheets (e-LKPD), enabling the delivery of materials in a more interesting and effective manner. Their study demonstrates that the use of iSpring Suite improves the validity and practicality of teaching materials. Therefore, integrating the iSpring Suite application into smartphone-based tests is considered an innovative step toward creating a more adaptive and efficient assessment system compared to conventional paper-based tests in the current digital era.

Based on the description above, this research aims to develop a smartphone application-based test using iSpring Suite for Indonesian language learning in elementary schools as a solution to the limitations of conventional evaluation.

Method

This research uses the Research and Development (R&D) method with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). R&D is a research method conducted to produce a specific product and test its effectiveness (Eny Winaryati, 2021). This model was chosen because it is systematic and procedural, which allows for the creation of a product that is measurable, tested, and aligned with user needs (Branch R. M., 2009). This study focused on developing a smartphone-based test application using iSpring Suite for fifth-grade Indonesian language subjects in elementary school.

The subjects of the research were 37 fifth-grade students at Wajageseng Elementary School, determined purposively to match the target users of the developed product. Additionally, the Indonesian language teacher was involved as a partner to ensure the suitability of the evaluation media's implementation with the classroom learning context. Product validation was carried out by material experts and media experts who have competencies in their fields, so the feedback provided could be used to improve the product's quality.

The instruments used in this research included a media expert validation sheet, a material expert validation sheet, and a student response questionnaire. The tools used in developing the product included a laptop with iSpring Suite software integrated with PowerPoint for design and APK Builder to convert the product into an application format.

Begin with the analysis, according to Syahidin & Adnan (2022), said that analysis is a set of interconnected activities and processes to break down a problem into more detail, then reassemble it and draw a conclusion. This stage involved identifying the needs of educators, students, learning content, and the necessary tools. The educator analysis focused on the need for digital evaluations with audio/visuals and practice questions, while the student analysis focused on their readiness to use smartphones as an evaluation tool. The learning content analyzed referred to the learning outcomes and objectives of Indonesian language for Phase C. The tools used included a laptop with iSpring Suite software integrated with PowerPoint for design and APK Builder to convert the product into an application format.

Design Stage, from Nasution et al. (2024) they define design as an activity of creating or planning before producing an object, system, component, and structure. This stage included creating a question grid based on learning outcomes, designing various question types such as Multiple Choice, True/False, Short Answer, Fill in the Blank, Matching, Sequence, Drag-and-Drop, and Likert Scale, as well as designing the application's interface. The design was made to be kiddos friendly with an attractive visual display, large icons, bright colors, and simple navigation for easy understanding by elementary school students. The product also included interactive features like automatic feedback and instant scoring.

Development stage, In the development stage, the question grid and materials were processed into a digital evaluation format using iSpring Suite. The initial product was validated by material experts to assess its content's suitability with learning indicators and by media experts to evaluate the visual display, navigation, and application compatibility.

Implementation stage, it’s based on Tsuraya et al. (2022), implementation is the act of providing the means to carry out something that results in an impact on something else. In this stage, the researcher conducted a limited trial with fifth-grade students. The trial aimed to ensure the application's functionality, assess its feasibility, and obtain student feedback regarding ease of use and their interest in the digital evaluation.

Evaluation Stage, this stage, as emphasized by Busnawir et al. (2025), to highlights the importance of a comprehensive evaluation that looks not only at learning outcomes but also at the learning process and user perception. Evaluation was carried out by analyzing both quantitative and qualitative data. Quantitative data was obtained from a questionnaire analyzed using a five-point Likert scale and categorized as very good, good, fair, poor, or very poor. Qualitative data was gathered from interviews, questionnaires, documentation,

and respondent comments, which were then used to refine the final product to better suit learning needs (Sahir, 2022).

Table 1. Applicability criteria

Persentages (%)	Applicability criteria
81 – 100	Very applicable
61 – 80	Applicable
41 – 60	Moderately applicable
21 – 40	Not applicable
0 – 20	Very not applicable

This research was conducted with permission from the school and the classroom teacher. All student participants were involved voluntarily with the consent of their teacher and parents. The identities of the students were kept confidential, and all data were used solely for research purposes.

Result and Discussion

Result

The research findings indicate that the *smartphone*-based test application developed using iSpring Suite has a very good level of feasibility. The validation by media experts obtained a score of 78 (86.67%) with a "Very Feasible" category, while the validation by material experts obtained a score of 54 (72%) with a "Feasible" category. The product's implementation with fifth-grade students at Wajageseng State Elementary School also showed positive results, with an average total score of 51.81 (86.40%) in the "Very Good" category. These findings suggest that the use of interactive, flexible, and technology-based digital tests can increase student interest and engagement compared to traditional, monotonous paper-based tests. This aligns with previous research findings, positioning it as an innovative alternative that meets the demands of 21st-century digital literacy.

The feasibility test was conducted to assess the validity or feasibility of the smartphone-based test developed by the researcher using iSpring Suite. This validation process involved two validators, namely a media expert and a material expert. In the media expert validation, the assessment instrument consisted of 8 main indicators which were developed into 18 items, namely ease of use, navigation, application display, text font, multimedia, interactivity, instructions, and LMS integration. The following table presents the percentage results of the media expert validation.

Table 2. Results of the Media Expert Validator Questionnaire

Score	Average	Score range	Category
78	86,67%	81–100%	Very applicable
		86%	

Furthermore, in the material expert validation, the assessment instrument consisted of 8 main indicators which were developed into 15 statements. These eight indicators include learning content, clarity of material, contextualization of material, accuracy of content/concepts, depth of material, sequence of material, appropriateness of language rules, as well as graphics and presentation.

Table 3. Material Expert Validation Questionnaire Results

Score	Average	Score range	Category
54	72	61–80%	Applicable
		72%	

Based on the results of the media and material validation, it was stated that the smartphone-based test using iSpring Suite is valid to be used as a transition from paper-based tests to digital tests in line with technological developments in education.

Subsequently, the user trial was conducted with 37 fifth-grade students of SD Negeri Wajageseng. The students' responses to the product were collected through a questionnaire and then analyzed to determine the score of each assessed aspect. Based on the results of the questionnaire responses from the students toward the developed smartphone-based test, data were obtained from 37 fifth-grade students of SD Negeri Wajageseng on July 19, 2025. The percentage results can be seen in the table below.

Table 4. Results of the User Response Questionnaire

Score	Average	Score range	Category
1.917	86,40%	81–100%	Very worth
		86,40%	

Based on student responses to the digital evaluation tool developed with iSpring Suite, a percentage of 86.40% was obtained, which falls into the "Very Good" category. These results show that the developed digital evaluation media provides a positive learning experience for students. The positive response indicates that students are motivated and more interested in participating in evaluations presented interactively through digital devices. This evaluation media not only simplifies the process of measuring learning outcomes but also encourages active student engagement.

In line with this, a study by Shaik et al. (2023) shows that using interactive online quiz platforms is effective in increasing student engagement and facilitating the process of formative assessment in the classroom. Thus, this digital evaluation tool is effective as an innovative alternative in the assessment process and is relevant to the demands of 21st-century learning, which emphasizes digital literacy.

Discussion

Based on the results obtained, the smartphone-based test application developed using iSpring Suite has met the feasibility criteria from both a media and a material perspective. The media expert validation resulted in a score categorized as "Very Feasible", while the material expert validation obtained a score categorized as "Feasible". Furthermore, the responses from fifth-grade students showed a score in the "Very Good" category.

These findings indicate that the developed product is not only theoretically accepted by experts but is also well-liked and easily understood by the students, who are the primary users. This is in line with the statement by Gronlund & Waugh (2013) in their book, *Assessment of Student Achievement*, which asserts that assessment can be conducted through remote learning, as long as it adheres to fundamental principles such as validity, reliability, and systematic measurement. Comparing this study with the research by Primaniarta and Mulyani (2020) titled “Development of an ICT-Based Learning Evaluation Tool Using iSpring Quizmaker 9.0 for Fifth Grade in Thematic Learning on Heat Transfer," there are several similarities and differences. The similarities are both of the studies focused on developing ICT (Information and Communication Technology)-based evaluation tools using iSpring software. Primaniarta and Mulyani's findings showed that their product received expert validation in the "Very Feasible" category, which aligns with the findings of this study, where the iSpring Suite-based digital instrument was also deemed feasible by experts.

The differences: The most notable difference in the product development stage. Primaniarta and Mulyani's (2020) research stopped at the expert validation stage due to the limitations of the pandemic situation, and thus the product was not directly implemented with students. In contrast, this study included a direct product implementation stage with students, providing additional data regarding user responses.

Meanwhile, this research was continued to the implementation stage in an elementary school, with a direct trial on fifth-grade students. The implementation results showed a very positive response, meaning the product is not only theoretically feasible but also effective and accepted in real-world teaching and learning practices. This aligns with Anastasopoulou et al. (2024), who explained that digital technology has revolutionized formative assessment by introducing features like AI-based adaptive learning, gamification, interactive multimedia, and real-time feedback. Platforms such as Learning Management Systems (LMS), Google Forms, or automated quiz systems allow teachers to continuously monitor student progress, provide timely support, and create a more personalized, inclusive, and flexible learning environment. Thus, the digitalization of assessment is not merely a transformation of media but also a pedagogical transformation that strengthens the role of assessment in improving overall learning quality.

In addition, the results of this study are in line with the findings of Azzahra et al. (2025), who found that digital platforms can increase student engagement through interactive displays. Similar results were also shown by the research of Marzuki & Soraya (2024), which found that digital evaluation provides quick feedback and increases learning motivation. However, this research offers an update in the form of a digital evaluation application tailored to the characteristics of elementary school students, where a simple interface, easy navigation, and varied interactive questions are key factors that support the product's success.

A new finding from this study is that the test developed with iSpring Suite can be an innovative alternative to support the "Merdeka Curriculum" policy, which emphasizes the integration of technology in learning. According to Syamsuar & Reflianto (2024), technology-based learning is a primary strategy for facing the challenges of the Industrial Revolution 4.0. Information and Communication Technology (ICT) not only accelerates the learning process but also provides a more interactive and flexible learning experience. Therefore, interactive tests not only help measure learning outcomes but also train students' digital literacy skills from an early age. This demonstrates the contribution of this research to the development of learning evaluation practices that are adaptive to the needs of the current era.

The research also shows that the smartphone-based test application using iSpring Suite has a wide potential for use across various subjects. Its main advantage is the flexibility of its diverse question formats. In his study on multimedia learning, Mayer (2022) stated that using interactive software for evaluation allows students to have a more cognitively active learning process, even in a digital environment. This is supported by iSpring Suite’s features, which enable the creation of diverse question formats such as multiple-choice, drag-and-drop, scenario-based simulations, and multimedia-based questions. These variations not only assess factual knowledge but can also measure higher-order thinking skills. This aligns with the view of Inana et al. (2021) that a good learning evaluation should be able to measure cognitive, affective, and psychomotor aspects in a balanced way.

Despite the product being rated as "very good" by students and "feasible" by experts, the research also found some challenges in its implementation. A few students faced technical issues like limited internet data and device specifications. This indicates that digital infrastructure readiness is a crucial factor for the successful implementation of digital tests. This finding is consistent with Dhera et al. (2024), who noted that limited access to technology can affect the effectiveness of digital learning media if not addressed with appropriate solutions.

Furthermore, this research reinforces the view of Huljannah (2021) that evaluation is not just a tool for measuring learning outcomes but also a means of learning itself. The

developed digital test was proven to increase students' interest and motivation in completing the questions, as the interactive display provides a different experience from paper-based tests. Thus, this test not only plays a role in assessment but also in improving the quality of the learning process (Zharif & Waskito, 2024). The findings also confirm that applying technology-based evaluation aligns with the principles of the Merdeka Curriculum, which encourages differentiated and technology-based learning. The developed product shows that students can adapt quickly to digital media, making it easier for teachers to implement various evaluation strategies. This is consistent with Jaya & Magdalena's (2024) view that digital evaluation media can bridge the gap between learning needs and modern educational technology developments.

This research also demonstrates consistency with Admaja et al. (2019), who developed a multimedia tutorial for teachers on creating computer-based test software. The similarity lies in the goal of optimizing technology to aid the evaluation process. However, this study presents a novelty by focusing on smartphone-based mobile devices, making it more accessible to students directly without needing additional devices like computers or laptops. This offers a practical advantage, as most elementary school students today are familiar with using smartphones. Nevertheless, a key challenge to be noted is the aspect of equitable access to technology among students. Although most students have smartphones, a small number still face issues with facilities and internet networks. This limitation is similar to Wahyuning's (2021) findings, which stress that using technology in learning must consider device readiness and students' digital literacy. Therefore, future efforts should include specific strategies to ensure every student has an equal opportunity to access digital tests.

Finally, in terms of practical contribution, this research has the potential to be a reference for teachers and media developers in creating more innovative digital evaluation instruments. The smartphone-based test application using iSpring Suite not only simplifies the assessment process for teachers but also enhances students' learning experience by making it more interactive and enjoyable. With this research, it is hoped that more similar innovations will emerge to support the improvement of learning quality in the Society 5.0 era.

Conclusion

Based on the results of the research and development, a product in the form of a smartphone-based digital test using iSpring Suite for elementary school Indonesian language subjects was created. This product is designed to assist teachers and students in the learning assessment process more interactively and efficiently. The development followed the systematic ADDIE model, which includes analysis, design, development, implementation, and evaluation stages, ensuring the final product meets user needs.

The validation results show that the developed media is feasible for use. The media expert validation obtained a score of 86.67%, categorized as "Very Feasible", while the material expert validation reached 72%, categorized as "Feasible". The trial with fifth-grade students yielded a positive response with a percentage of 86.40% ("Very Good"), indicating that the media is well-received and helps students complete learning evaluations in an engaging manner.

The product is proven to increase student motivation and engagement while also making it easier for teachers to conduct practical assessments of learning outcomes. These findings reinforce the views of Huljannah (2021) and Zainuri et al. (2019) that a good evaluation instrument must meet the criteria of being valid, reliable, practical, objective, and economical. Additionally, the research results align with Marzuki & Soraya (2024), who emphasized that using technology-based evaluation can provide a more interactive and effective learning experience.

Therefore, the smartphone-based digital test developed in this research using iSpring Suite is not only theoretically sound but also proven to be practically effective for use in elementary school Indonesian language learning. This product serves as an innovative alternative that supports 21st-century digital literacy.

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