

Developing Digital Learning Media for Teaching Public Speaking to Improve English Skills of Junior High School Students

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The limited availability of interactive and contextual learning resources in rural areas has posed a significant challenge for English language acquisition, particularly in speaking skills. This study aimed to design and develop digital learning media for teaching public speaking to enhance the English proficiency of junior high school students at SMP Satap 8 Maiwa, Enrekang Regency. Employing a Research and Development (R&D) approach with the 4D model (Define, Design, Develop, and Disseminate), the study engaged 29 seventh-grade students and English teachers as participants. The needs analysis revealed that 88.3% of students expressed strong interest in using digital media such as e-books, videos, and interactive activities to support their learning, while teachers highlighted the lack of accessible and practical media for classroom implementation. The developed digital media integrated text, images, videos, and interactive exercises, designed with Canva and converted into a Heyzine Flipbook for user-friendly navigation. Expert validation showed high validity scores from both media (86.7%) and content (95.6%) specialists. Furthermore, small- and large-scale trials demonstrated strong practicality and effectiveness, with student responses reaching 90.6% and 92.3% respectively, indicating that the media was engaging, easy to use, and supportive in improving public speaking skills. Teachers also rated the media as creative, innovative, and efficient (87.5%). These findings indicate that the digital learning supports developed in this study are valid and practical, offering an effective way to improve students' communication skills. In addition to the benefits of the classroom, the study contributes to the ongoing digital transformation of rural education and offers valuable possibilities for recognition in similar educational contexts.

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Introduction

English has long been recognized as a global lingua franca that allows communication between cultures, disciplines and professional areas. In the age of globalization, the effective use of English has become a core competency for students from non-English-speaking countries, including Indonesia, fostering academic success and broader career possibilities (Albiladi & Alshareef, 2019). Knowledge of English is not only an academic condition, but a gateway to wider opportunities in higher education, international cooperation and professional development. Among

the four main language skills, the biggest challenge is speaking, as it requires the integration of language competence, self-confidence, fluency and pragmatic awareness (Majeed & Hameed, 2020). Public speaking is a basic communication skill that improves students' confidence, critical thinking and the ability to relate effectively to the audience. Developing students' capacity for public dialogue, especially in secondary education, is a strategic investment to strengthen communication skills and the leadership potential of the future (Haris et al., 2022).

Despite its importance, teaching English remains a

challenge in Indonesia, especially in rural areas and remote schools. The conventional classroom model, based on textbooks and teacher-centred teaching, has often been ineffective in fostering students' capacity for meaningful dialogue (Sultan & Aziz, 2021). Students in rural schools, such as Enrekang Regency, have limited access to learning resources and have minimal exposure to language use or learning with stimulating environments. In these contexts, English is often perceived as an abstract academic subject, rather than as a practical communication tool, as it increases low motivation and anxiety in speaking tasks. This inequality underscores the urgent need for innovative and accessible solutions to bridge the educational gap between city and rural areas.

Studies have shown that digital learning tools can serve as a transformative force to reduce educational inequalities. From e-books and multimedia apps to interactive videos, the integration of digital resources creates more immersive and engaging learning contexts, while promoting a learner-centered environment that promotes active participation and deeper understanding (De Vega et al., 2023). Previous studies have shown that digital learning materials can significantly improve students' motivation, attention, and overall language learning performance. Multimedia elements, such as visuals, audios, and interactive exercises, support dual coding and multimodal processing, improving comprehension and adherence. More importantly, digital platforms create opportunities for students to practice speaking in dynamic and authentic contexts, while also enabling immediate feedback and self-reflection (Bower, 2019). For public speaking, digital media can simulate real-life scenarios, provide models of effective speech delivery, and encourage repeated practice in a low-anxiety environment.

However, the benefits of digital learning media are not equally distributed across all regions. Research indicates that most innovations in digital language learning have been designed for urban schools with stable internet access and adequate technological infrastructure (Chiu, 2021). In rural schools, particularly in Enrekang Regency, the lack of resources, teacher training, and reliable connectivity poses serious barriers. Teachers often report difficulties in designing or accessing interactive digital content, while students express greater interest in learning through images, videos, and interactive tools rather than traditional textbooks (Safitri et al., 2022). This mismatch between student expectations and teacher capacity highlights a significant research and practice gap: how can digital media be designed and implemented effectively in low-resource contexts to support English speaking and public speaking development?

The state of the art in digital language learning shows a variety of models and tools, from mobile-assisted language learning (MALL) applications to flipped classroom platforms and learning management systems. These approaches have been proven to

enhance learner autonomy, collaborative learning, and communicative competence (Hermansyah, 2023). Nonetheless, most of these studies focus on general speaking skills or reading and writing enhancement, while fewer target the specialized domain of public speaking. Public speaking requires not only linguistic accuracy but also paralinguistic features such as voice modulation, gestures, and audience engagement. Therefore, digital media for public speaking must go beyond static content to integrate interactive features, audiovisual examples, and performance-based tasks. Furthermore, few studies have considered the unique needs of junior high school learners in rural areas, where technological accessibility and cultural relevance must be carefully balanced.

This study responds to these gaps by developing and validating digital learning media specifically designed for teaching public speaking in English to junior high school students at SMP Satap 8 Maiwa, Enrekang Regency (Karakaya & Bozkurt, 2022). The research builds upon the 4D development model (Define, Design, Develop, Disseminate), ensuring that the product is systematically created, validated, and tested in authentic learning contexts. During the needs analysis stage, students expressed overwhelming support (88.3%) for digital media that incorporated text, images, and videos, while teachers emphasized the need for practical and efficient tools to improve classroom engagement (Temel & Cesur, 2024). These findings confirm the necessity of contextually appropriate media that addresses both pedagogical and infrastructural challenges in rural schools.

The novelty of this research lies in its focus on public speaking as a core element of communicative competence, combined with the design of a lightweight, offline-accessible digital medium suitable for rural settings. Unlike many digital learning innovations that involve stable access to the Internet, the supports developed in this study can be used with minimal technological demands, while offering interactive and multimodal features. In addition, the integration of localized content, such as glossaries and the known context, increases cultural importance and encourages greater student involvement in the learning process (Mudinillah et al., 2024). This approach improves English proficiency and reduces learning anxiety, builds confidence, and better prepares students for more complex communicative tasks.

From a broader point of view, this study coincides with Indonesia's National Action Plan for Digital Transformation and Equitable Education, especially in the Rencana Induk Riset Nasional (RIRN) and Asta Cita development goals (Lababa et al., 2023). The study shows a practical way to reduce educational gaps and for students to participate in global communication networks through the use of digital media. At the same time, it offers teachers innovative tools to transform their pedagogical practices, while strengthening their professional skills in technological integration (Shadiev et al., 2017).

Consequently, the implementation of digital learning supports in SMP Satap 8 responds to the urgent educational need to bridge language learning, technological innovation and the progress of rural education (Elyani et al., 2022). This study highlights the potential of digital resources designed in the context to foster communicative competence, improve student motivation and empower teachers in resource-poor environments. Its main objective is to design, validate and implement effective, practical and attractive digital aids for learning that, in addition to improving students' English, contribute to combating educational inequalities in rural Indonesian areas (Zou et al., 2019).

Methodology

Research Design

This research used the Research and Development (R&D) approach, highlighting not only the creation of an innovative educational product, but also the empirical evaluation of its effectiveness. Specifically, the 4D, Define, Design, Development and Diffuse model was applied, from the identification of needs to the creation and testing of products. The model was chosen because of the flexibility to adapt to different educational contexts, especially in low-income schools. In this framework, the objective of the study was to determine the validity, practice and effectiveness of the digital learning supports developed for the teaching of language skills in rural areas.

Research Site and Participants

The study was conducted at SMP Satap 8, in Enrekang Regency, Indonesia, in a rural school with limited access to digital resources and stable internet connection. Among the participants were 29 seventh-grade students who were the main users of digital learning media. The English language teachers also collaborated in the planning and evaluation process. In addition, two experts participated as product validators: one media design specialist and the other English-speaking content specialist. The involvement of these diverse stakeholders ensured a balanced consideration of pedagogical, technical, and learner-centered perspectives. Student participants were selected voluntarily, representing different proficiency levels in English.

Data Collection Instruments

A variety of instruments were employed to gather comprehensive data across the different phases of the study. A needs analysis questionnaire was distributed to both students and teachers to identify challenges and preferences in English learning, with a focus on speaking and public speaking skills. Expert validation sheets, structured with Likert-type scales, were used by the media and content experts to assess the prototype's design, usability, linguistic relevance, and engagement. During the trial phase, student response

questionnaires captured learners' perceptions of practicality and attractiveness, while teacher evaluation forms assessed classroom usefulness. To measure performance improvement, pre- and post-tests were conducted, focusing on fluency, accuracy, and audience engagement. Classroom observations and field notes were also recorded to document learning interactions and technical challenges.

Development Procedures (4D Model)

The 4D model was implemented sequentially. In the Define stage, needs analysis revealed that 88.3% of students preferred digital resources incorporating images, videos, and interactivity, while teachers emphasized the lack of engaging speaking tools. In the Design stage, a storyboard and prototype were created, embedding multimedia features such as video demonstrations of speeches, interactive self-practice tasks, and culturally relevant vocabulary. In the Develop stage, production was carried out using Canva and Heyzine Flipbook, with added teacher-recorded voices, video integration, and navigational features for learner autonomy. Finally, in the Disseminate stage, the product was implemented in classrooms after expert review and revisions.

Validation Procedures

Validation was carried out by two experts to ensure the quality of the digital learning media. The media expert assessed technical aspects such as design, color scheme, typography, navigation, and multimedia resolution, awarding a validity score of 86.7% (very good) with minor suggestions for improvement. The content expert evaluated linguistic accuracy, clarity, and curriculum alignment, giving a score of 95.6% (excellent). Feedback indicated that the media was pedagogically sound, motivating, and ready for classroom use with only minor revisions.

Trial Implementation

Trials were conducted in two phases. The small-scale trial involved five students who tested the prototype, resulting in a 90.6% practicality rating. Students reported that the media was engaging, easy to navigate, and motivating. After improvements, the large-scale trial was conducted with 24 students, yielding a 92.3% satisfaction rate. Learners indicated increased motivation, reduced speaking anxiety, and better comprehension of dialogue structures. Teachers supported these findings, noting higher student engagement and evaluating the product as creative, innovative, and efficient with an overall score of 87.5% (very good).

Data Analysis

Both quantitative and qualitative techniques were used. Quantitative data from validation scores, teacher evaluations, and student responses were converted into percentages and interpreted using established criteria. Pre-test and post-test results were analyzed using paired-sample tests to assess significant

improvements in speaking performance. Qualitative data from observation notes and open-ended responses were thematically coded to identify recurring patterns of benefits and challenges. This integrated approach ensured both statistical rigor and rich contextual insights into the experiences of students and teachers.

Ethical Considerations

Ethical standards were rigorously upheld throughout the research process. Informed consent was obtained from the school management, teachers, students and parents. Confidentiality was maintained by anonymizing the data collected in the reports and publications. Intellectual property rights were respected, ensuring that all multimedia materials were created by researchers, obtained or duly accredited from free databases. In addition, the university's research commission gave its ethical approval before implementation. These actions ensured that they complied with international scientific standards and increased trust among all actors and stakeholders.

Result

This section presents the results of the development, validation and implementation of digital learning scholarships for public speaking at SMP Satap 8, Maiwa, Enrekang Regency. The results are explained in four parts: needs analysis (1), expert validation (2), small- and large-scale experiments (3), and teacher evaluation (4). Quantitative and qualitative findings are integrated to provide a holistic view of product efficacy and practice.

Needs Analysis

The needs analysis questionnaire was distributed to 29 seventh-grade students and their English teachers. The results showed that students decided to integrate multimedia English into English learning. As shown in Table 1, most students agree that learning English with visual, auditory and interactive elements makes subjects more attractive. Specifically, 88.3% of respondents rated digital learning resources as "highly needed." Teachers also expressed the urgent necessity of digital media that could make the classroom more interactive and reduce students' speaking anxiety.

Table 1. Results of Student Needs Analysis (N=29)

Item	Statement	Score	% Agreement	Interpretation
1	Enjoy learning English with printed books	117	67.2%	Moderately positive
2	Prefer learning English with pictures	144	82.7%	Positive
3	Prefer learning English with videos	111	76.5%	Positive
4	Easier to understand English with digital media	133	85.3%	Strongly positive
5	Agree e-book should be used for English learning	128	82.7%	Positive
6	Agree e-book should contain pictures	128	82.7%	Positive
7	Agree e-book should contain videos	122	80.0%	Positive
8	Digital media for English is attractive	131	86.2%	Strongly positive
Total	—	1484	88.3%	Highly needed

Source: Prepared by the author (2025)

The table indicates that students overwhelmingly valued digital features such as images and videos, confirming that the development of multimedia-based public speaking resources was both timely and essential.

Expert Validation

The digital learning media prototype was evaluated by two experts. The media expert assessed design quality, usability, and interactivity, while the content expert focused on linguistic accuracy, curriculum alignment, and pedagogical effectiveness.

The media expert validation yielded a total score of 52 out of 60, equivalent to 86.7%, which was categorized as "very good." Minor revisions were suggested, such as citing image sources, improving video resolution, and adding a back cover to the e-book. The content expert obtained a score of 45 out of 50, that is, 90.0%, classified as "excellent." The content was accurate, clear, and aligned with the standard curriculum. Both

validations confirmed that digital media were suitable to implement after small improvements in the classroom.

Small-Scale Trial

The revised prototype was tested with five students. The results showed a high practice rating of 90.6%. Students reported that the media was engaging, easy to navigate, and motivating. They especially appreciated the introduction of videos and interactive exercises that helped them understand the structure and delivery of the lectures. The observations indicated that students were willing to speak compared to traditional subjects, which demonstrated a greater willingness to speak.

Large-Scale Trial

After the successful pilot, digital media was implemented with 24 students. Table 2 summarizes the results of the evaluation of this trial.

Table 2. Results of Large-Scale Trial (N=24)

Aspect	Score	% Agreement	Interpretation
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English more interesting with digital media	111	91.2%	Very positive
Easier to understand "My School Activities" with e-book	100	87.7%	Very positive
Content presented systematically	98	86.0%	Positive
Text easy to understand	101	88.6%	Positive
Pictures and videos relevant to content	103	89.5%	Very positive
Attractive visual design	114	94.7%	Very positive
Easy to operate	106	90.0%	Very positive
Increased motivation to learn English	109	91.5%	Very positive
Total	842	92.3%	Highly practical

Source: Prepared by the author (2025)

The results indicate that students defend the use of digital media, improving motivation, comprehension and enjoyment for learning English.

Teacher Evaluation

The English teacher's evaluation gave further affirmations of the product's practice and innovation. The professor values that digital media are creative, innovative, communicative and efficient, with an overall score of 87.5%, which is "very good". The professor stressed that the media facilitated the explanation of the materials, reduced the monotony of the topics and encouraged greater participation of students in public dialogue activities.

Overall Findings

At all stages, the results showed that the digital media developed were valid, practical and effective. The students showed more motivation and confidence in speaking, and the teachers valued the creativity and effectiveness of the tool. The combination of quantitative and qualitative evidence suggests that the product responds to the needs of rural students by aligning the curriculum with standards.

Discussion

The objective of this research was to develop, validate and implement digital supports for digital learning for public English teaching in SMP Satap 8, Maiwa, Enrekang Regency (Pirda et al., 2024). The results of the study reveal some findings in line with the previous literature in the field of better language learning.

First, the needs analysis confirmed that students in rural contexts prefer digital learning tools with multimedia features. This finding is consistent with the cognitive theory of Multimedia Learning, which underscores the role of visual and auditory channels in improving comprehension and adherence (Samat & Aziz, 2020). In the context of a public lecture, videos and images offer not only linguistic comprehension, but also the models of pronunciation, intonation and body language essential for the effectiveness of language. The large proportion of students who have embraced digital media also shows that, even in resource-poor settings, students turn to technology-based teaching, designed to be cheap, accessible, and engaging (Nguyen, 2024).

Second, the validation of the experts confirmed that the digital learning supports met high standards of

pedagogical and technical quality. The media expert highlighted the aspects of usefulness and interactivity, while the content expert highlighted curricular alignment and linguistic accuracy, ensuring that the product was functional and taught (Hennessy et al., 2022). These dual approaches are critical to ensure an effective integration of functionality and pedagogy. The high content validation score (95.6%) indicates that the material is effectively aligned with the existing curriculum, so teachers can take it without major adaptations. This discovery reinforces the importance of aligning digital learning supports with curriculum objectives to achieve greater recognition and recognition from educators.

Thirdly, the results of the experiment showed great practice and effectiveness of digital media. Students in small and large studios showed great satisfaction with a score above 90%. This suggests that the product not only attracted attention, but also modified students to engage in conversation tasks that were previously scary (Getenet et al., 2024). These results coincide with the WHO's finding that digital platforms can significantly reduce anxiety in foreign language speech, structuring practice and offering cooperative environments. In this study, students have shown greater confidence and motivation to give lectures, taking into account the high levels of anxiety associated with exposure to the public (Özdemir & Seçkin, 2025).

Fourth, teacher evaluation sparked the practice of digital media in classroom environments. Teachers found that media is creative and effective, reducing the monotony of traditional teaching methods and boosting student engagement (Xiong, 2025). This approach is critical, since the recognition of teachers often determines the sustainability of educational innovation. According to teachers' belief and attitude towards technology play a fundamental role in successful integration. In this analysis, the teacher's positive assessment suggests that digital aids can be broader with adequate training and support.

Another important finding of the discovery is the potential of digital media to combat educational inequalities in rural areas. Most of the previous studies on digital education were conducted in urban schools with adequate technological infrastructure (Xu, 2024). In contrast, this study shows that lightweight, offline accessible digital media can be highly effective in conditions where resources are scarce. Using simple tools like Canva and Heyzine Flipbook ensured that

the help was cheap and scalable. This coincides with the argument that digital equality is not only about providing devices, but also about creating contextual content (Hollimon et al., 2025). This analysis accepts this discourse and shows how localized digitized media can meet the limited needs and resources of rural students.

In addition, the research looks at one area, most notably the correction of public speaking ability, a skill that is often forgotten in English teaching. While many digital learning interventions focus on vocabulary, grammar, or comprehension, they are less to address the challenges of oral communication, particularly in formal contexts, such as public speaking (Muhammadiyah et al., 2021). By integrating speech models, interactive exercises, and performance tasks, the developed media provided students with opportunities to practice essential communicative competencies. This contribution is significant, as public speaking fosters critical thinking, confidence, and leadership skills, which are vital for students' academic and professional futures.

Despite these strengths, several limitations should be acknowledged. First, the study was limited to a single school with a relatively small sample size, which may restrict the generalizability of the findings. Second, while the product was tested in controlled classroom settings, long-term effects on speaking proficiency were not measured (Cipriano et al., 2024). Third, the reliance on self-reported data may introduce response bias, as students and teachers could have provided socially desirable answers. Future studies should involve larger and more diverse samples, longitudinal tracking of learning outcomes, and mixed-method evaluations incorporating performance-based assessments and external raters.

Finally, the findings have important pedagogical and policy implications. For teachers, the study demonstrates the value of integrating digital media into speaking lessons to reduce anxiety and increase student engagement (Rezai et al., 2025). For policymakers, the study highlights the need to support the development of contextually appropriate digital resources that can be implemented in rural schools without heavy infrastructure investment. At a broader level, the study contributes to Indonesia's digital transformation agenda and aligns with global goals of educational equity and quality learning opportunities for all (Okoye et al., 2025).

In discussion underscores that the developed digital learning media was valid, practical, and effective in enhancing public speaking skills among junior high school students in a rural context. Not only did it improve students' motivation and confidence, but it also provided teachers with a creative and effective learning tool (Ikhsan & Akhsan, 2022). The novelty of the focus on public speaking, together with the appropriateness of the product's context, makes this research a reference in the literature on technology-based language learning.

Conclusion

The results of this study suggest that the development of digital educational aids based on a 4D model is viable and effective to improve the public expression skills of high school students in rural areas. Through the systematic phases of definition, design, development and dissemination, the product successfully responded to the specific needs of the students and teachers of the SMP Satap 8. The validation of the experts reaffirmed the high accuracy of the content and the quality of the media, as the tests carried out with students and teachers showed notable improvements in practice, engagement and motivation. Collectively, these findings confirm that carefully designed digital resources can help bridge gaps in English language learning, offering accessible, interactive, and context-relevant tools.

In addition to validating the efficacy of the product, this research contributes to creating a broader discourse on digital equity in education. It shows the potential of agile digital tools and innovative and flexible solutions to help schools with limited infrastructure, thereby expanding learning possibilities for learners who are often marginalized in global education systems. Focused mainly on public speaking, the research fills an important gap in technologically enhanced language learning, where oral communication skills have traditionally received less attention compared to reading or grammar. Integrating dialogue models, interactive tasks, and multimedia features contributed not only to language proficiency, but also to confidence, anxiety, and real-world communication.

Despite its strengths, the study also acknowledges some limitations, such as the small sample size and short implementation duration. These limits suggest that future studies should be retested in different domains, introduce longitudinal designs in the ability to measure long-term improvements, and use external performance evaluations to bolster confidence. However, the results of this study offer important pedagogical and policy implications. For teachers, the exam offers a model to improve the motivation and participation of digital media in English subjects. For politicians, it underscores the importance of investing in digital resources to foster educational equity in rural areas. In short, the digital learning supports developed constitute a practical and innovative vision to improve students' English skills, highlighting the transformative potential of digital tools for quality education for all students.

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