
Developing a Rumah Betang Philosophy-Based Interactive E-Module to Enhance Elementary Students' Public Speaking Skills and Self-Confidence

Sindi Apriliani^{1*}, Achmad Buchori¹, and Iin Purnamasari¹

¹Universitas PGRI Semarang, Semarang, Indonesia

* sindi.apriliani1597@gmail.com

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ABSTRACT

This study was motivated by elementary school students' limited public speaking skills and self-confidence during classroom learning. It aimed to develop and validate a Rumah Betang Philosophy-Based Interactive E-Module as a learning resource to support students' public speaking skills and self-confidence. The study employed a Research and Development (R&D) approach using the ADDIE model. A limited field trial was conducted with 11 sixth-grade students, while one media expert validated the developed product. Data were collected through observations, interviews, questionnaires, public speaking performance assessments, and documentation, and were analyzed descriptively using quantitative and qualitative techniques. The developed e-module obtained a media validation score of 48 out of 50 (96%), indicating that it was very valid. Following implementation, students' self-confidence achieved a mean score of 22.00 (88.00%), categorized as very high, while their public speaking performance reached a mean score of 19.00 out of 20 (95.00%), categorized as very good. These findings indicate that the developed e-module is a valid and practical learning resource with the potential to support elementary students' public speaking skills and self-confidence through the integration of Rumah Betang cultural values.

Keywords: *elementary school students, interactive e-module, public speaking skills, Rumah Betang philosophy, self-confidence*

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INTRODUCTION

Public speaking skills are among the essential competencies that should be developed in elementary education because they support students' communication abilities, critical thinking, self-expression, and active participation in learning activities ([Avdiu et al., 2025](#); [Azzahra & Anggreani, 2024](#); [Fitzgerald, 2021](#); [Mabuan, 2017](#)). Through public speaking, students learn how to organize ideas systematically, convey messages effectively, and interact confidently with an audience. These skills are increasingly important in the twenty-first century, where communication competence is recognized as one of the key skills required for academic success and future professional development ([Avdiu et al., 2025](#); [Rossette-Crake, 2019, 2020](#)). However, many elementary school students still experience difficulties when delivering speeches or speaking in front of their peers. Common challenges include nervousness, fear of making mistakes, limited ability to organize ideas coherently, and a lack of confidence when communicating in public ([Haniati & Jaya, 2026](#); [Herbein et al., 2018](#); [Saputro et al., 2023](#)). As a result, students' speaking performance often fails to reflect their actual knowledge and ideas.

Self-confidence plays a crucial role in determining students' success in public speaking activities. Students with higher levels of self-confidence tend to demonstrate greater willingness to participate in classroom discussions, express their opinions, and perform speaking tasks in front of an audience ([Akbari & Sahibzada, 2020](#); [Moneva & Tribunalo, 2020](#)). Conversely, students with low self-confidence often avoid communication opportunities and experience anxiety when required to speak publicly ([Akbari & Sahibzada, 2020](#); [Mohebi et al., 2018](#)). Previous studies have consistently reported a positive relationship between self-confidence and speaking performance, indicating that students' psychological readiness significantly influences their communication competence ([Novia et al., 2023](#); [Nur et al., 2020](#)). Similarly, Muin & Aswati (2019) found that students with stronger self-confidence generally demonstrate better oral communication skills and are more capable of expressing ideas effectively. Therefore, efforts to improve public speaking skills should not only focus on linguistic aspects but also address students' confidence and motivation to communicate effectively.

The rapid advancement of educational technology has created new opportunities for improving language learning through interactive digital media. Interactive e-modules have emerged as innovative learning resources that combine text, images, audio, video, animations, exercises, and assessments within a single digital platform ([Daud et al., 2024](#); [Dewi et al., 2022](#); [Syukur et al., 2025](#)). Compared with conventional printed materials, interactive e-modules provide more engaging and flexible learning experiences, enabling students to learn independently according to their own pace and learning needs. This finding is consistent with Setiawan et al. (2025), who reported that technology-supported learning environments foster students' self-directed learning and learning autonomy ([Setiawan et al., 2025](#)). Previous studies have demonstrated that digital learning resources can improve students' motivation, learning engagement, and academic achievement ([Uzorka & Obediyi, 2025](#); [Wong et al., 2025](#)). Interactive learning media have been shown to support students' speaking performance and communication skills through multimedia-based learning experiences ([Shofi, 2020](#); [Yeni Lestari et al., 2024](#)). Furthermore, interactive e-modules have been reported to enhance students' learning outcomes and participation in Indonesian language learning ([Daud et al., 2024](#); [Dewi et al., 2022](#)). Similar findings were reported by Syukur et al. (2025), who developed augmented reality-based science teaching materials and found that interactive digital resources effectively supported students' learning experiences ([Syukur et al., 2025](#)). Lathifah et al. (2025) demonstrated that interactive multimedia could improve students' analytical skills and engagement in learning activities ([Lathifah et al., 2025](#)).

In addition to promoting academic achievement, contemporary education emphasizes the importance of integrating local cultural values into learning processes. Culture-based learning enables students to connect academic content with their social and cultural environments, making learning more meaningful and contextual ([Dwiputra & Sundawa, 2023](#); [Singh, 2022](#)). This perspective is aligned with place-based education, which emphasizes the integration of local culture, community knowledge, and environmental contexts into learning experiences

([Isnawati et al., 2025](#)). The integration of local wisdom in education is also consistent with the spirit of the Merdeka Belajar policy, which encourages contextual and culturally responsive learning experiences ([Kemendikbudristek, 2022](#)). In Central Kalimantan, the philosophy of Rumah Betang represents an important form of local wisdom that embodies values such as togetherness, equality, tolerance, mutual respect, responsibility, and deliberation ([Wardani et al., 2020](#); [Rico et al., 2022](#); [Sobian & Sanjaya, 2025](#)). These values are highly relevant to character education and can contribute to the development of positive learning attitudes, including self-confidence and communication skills. Previous studies have shown that integrating local culture into learning activities can strengthen students' cultural identity while simultaneously supporting character development ([Org, 2024](#); [Wahyudi et al., 2025](#)).

Although previous studies have investigated the effectiveness of interactive e-modules in improving learning outcomes and explored the educational benefits of local wisdom integration, limited studies have combined both approaches in a single learning resource specifically designed to enhance elementary students' public speaking skills and self-confidence. Existing studies have mainly focused on the use of digital modules for improving academic achievement ([Daud et al., 2024](#); [Dewi et al., 2022](#)) or on the integration of Rumah Betang philosophy in character and religious education ([Wardani et al., 2020](#); [Rico et al., 2022](#); [Sobian & Sanjaya, 2025](#)). Furthermore, research related to Rumah Betang philosophy has primarily emphasized cultural preservation and character formation rather than communication skills development ([Wardani et al., 2020](#); [Rico et al., 2022](#); [Sobian & Sanjaya, 2025](#)). Therefore, research focusing on the integration of Rumah Betang philosophy into an interactive e-module for Indonesian language learning remains limited, particularly in the context of improving public speaking skills and self-confidence among elementary school students.

The novelty of this study lies in the development of an interactive e-module that integrates the philosophy of Rumah Betang into public speaking instruction for elementary school students. Unlike previous learning materials that primarily emphasize cognitive achievement, the developed e-module is designed to improve both speaking performance and self-confidence while introducing local cultural values through interactive and contextual learning experiences. Therefore, this study aims to develop a valid and practical Rumah Betang Philosophy-Based Interactive E-Module that has the potential to support students' public speaking skills and self-confidence.

METHOD

This study employed a Research and Development (R&D) approach to develop and evaluate a Rumah Betang Philosophy-Based Interactive E-Module designed to support elementary students' public speaking skills and self-confidence. The study adopted the ADDIE instructional design model proposed by Branch & Varank ([2009](#)), which consists of five sequential stages: Analysis, Design, Development, Implementation, and Evaluation. This model was selected because it provides a systematic framework for developing educational products and evaluating their effectiveness in learning environments. [Figure 1](#) presents the development procedure used in this study.

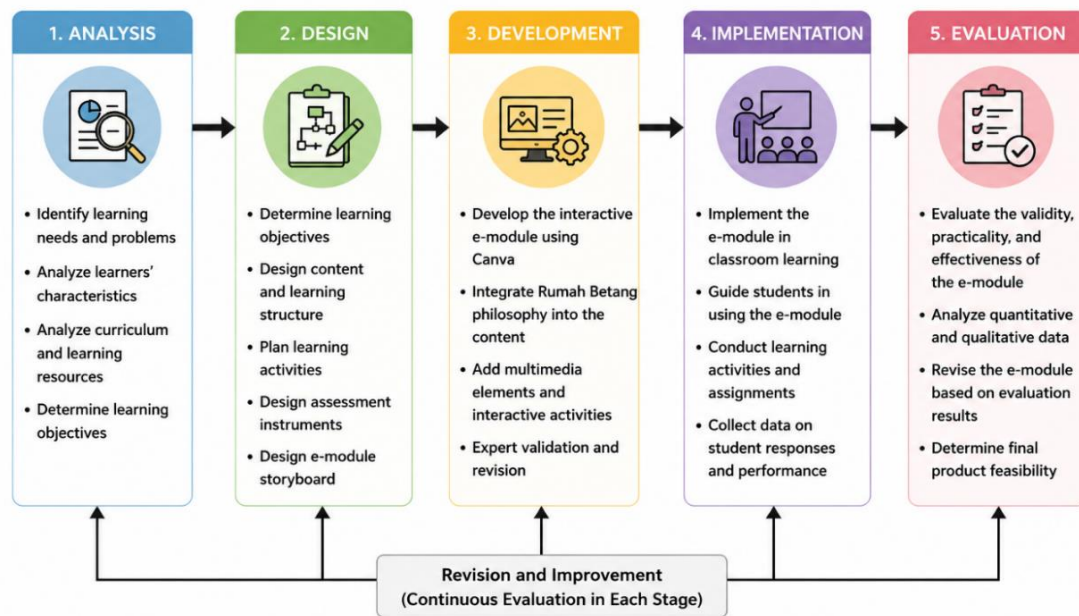


Figure 1. ADDIE Development Procedure

The research was conducted at SDN 3 Palangka, Central Kalimantan, Indonesia. The participants consisted of 11 sixth-grade students who were involved in the implementation and evaluation stages of the developed e-module. In addition, one media expert participated as a validator to assess the feasibility, usability, and quality of the developed product before classroom implementation. The implementation involved a limited field trial with a single group of students as part of the product development process. Therefore, the implementation was intended to obtain initial evidence regarding the feasibility and practicality of the developed e-module rather than to examine its effectiveness through an experimental design.

The first stage, Analysis, aimed to identify students' learning needs, difficulties in public speaking, and levels of self-confidence during classroom learning. Data were collected through classroom observations and interviews with the classroom teacher. The findings revealed that many students experienced difficulties in organizing speech content, delivering ideas confidently, and speaking in front of an audience. These findings became the basis for developing an instructional medium that addressed both communication skills and character development. The second stage, Design, focused on planning the structure and content of the e-module. Learning objectives, instructional materials, assessment instruments, learning activities, and interface designs were prepared during this stage. Public speaking materials were integrated with the values of the Rumah Betang philosophy, including togetherness, tolerance, equality, responsibility, and mutual respect. These cultural values were embedded within learning activities to provide contextual and meaningful learning experiences.

The third stage, Development, involved the production of the interactive e-module using Canva. Various multimedia components, including texts, images, videos, interactive exercises, and evaluation tasks, were incorporated into the learning material. The interactive e-module was systematically organized into learning sections that guided students from concept exploration to independent practice and evaluation. Each section included learning objectives, instructional materials, contextual examples reflecting the philosophy of Rumah Betang, interactive learning activities, formative exercises, and reflection tasks. The e-module was developed in a digital format using Canva, allowing the integration of multimedia elements such as images, videos, and interactive navigation to support students' engagement during learning. The product was designed to be accessed through commonly used digital devices, including smartphones and laptop computers, thereby providing flexible learning opportunities both inside and outside the

classroom.

After the product was completed, it was validated by a media expert to assess its visual design, navigation, content presentation, and usability. Suggestions and recommendations from the validation process were used to revise and improve the product before implementation. The fourth stage, Implementation, involved applying the developed e-module in Indonesian language learning activities. Students used the developed e-module during classroom instruction and independent learning activities. The implementation focused on observing students' learning experiences and collecting initial data on their responses, self-confidence, and public speaking performance as part of the product evaluation process.

The final stage, Evaluation, was conducted to determine the validity, practicality, and feasibility of the developed product for classroom use. Evaluation data were obtained from media validation results, students' self-confidence questionnaires, public speaking performance assessments, classroom observations, interviews, and supporting documentation. The evaluation findings were used to determine whether the developed e-module met the established quality criteria.

Data collection techniques included observation, interviews, questionnaires, performance assessments, and documentation. Observation was conducted to identify students' initial learning conditions and monitor their participation during implementation. Interviews were carried out with the classroom teacher to obtain information regarding instructional needs and responses to the developed e-module. Questionnaires were administered to measure students' self-confidence levels, while public speaking performance was assessed using a rubric covering content mastery, articulation, fluency, intonation, expression, and overall presentation skills. Documentation was used to support the research findings through photographs and learning records.

The research instruments consisted of a media validation sheet, interview guidelines, observation sheets, a self-confidence questionnaire, and a public speaking assessment rubric. The self-confidence questionnaire measured students' confidence in expressing opinions, speaking in front of others, interacting with audiences, and demonstrating belief in their own abilities. Meanwhile, the public speaking rubric evaluated students' performance based on communication indicators relevant to elementary-level speech activities.

The collected data were analyzed using descriptive quantitative and qualitative techniques. Quantitative data obtained from the validation sheets, questionnaires, and performance assessments were analyzed descriptively using mean scores and percentages to determine the validity, practicality, and feasibility of the developed e-module. The implementation data were interpreted descriptively to provide preliminary information regarding students' responses and learning performance during the limited field trial.

RESULTS AND DISCUSSION

Development of the Rumah Betang Philosophy-Based Interactive E-Module

The development of the Rumah Betang Philosophy-Based Interactive E-Module followed the ADDIE model, consisting of Analysis, Design, Development, Implementation, and Evaluation stages. During the analysis stage, classroom observations and teacher interviews revealed that many students experienced difficulties in delivering speeches, organizing ideas systematically, and demonstrating confidence when speaking in front of their classmates. These findings highlighted the need for innovative learning media that could support both communication skills and character development.

Based on the identified needs, an interactive e-module was designed and developed using Canva. The e-module integrated public speaking materials with the cultural values of the Rumah Betang philosophy, including togetherness, tolerance, responsibility, equality, and mutual respect. The learning materials were presented through multimedia elements such as texts, images, videos, interactive exercises, and evaluation activities to provide meaningful and engaging learning experiences.

To ensure that the philosophy of Rumah Betang functioned as a pedagogical foundation rather than merely as cultural content, its core values were systematically integrated into the instructional design of the interactive e-module. Each value was aligned with specific communication and character indicators, translated into contextual learning activities, and connected to the intended learning outcomes. This integration was intended to provide meaningful learning experiences while supporting students' public speaking skills and self-confidence through culturally responsive learning. [Table 1](#) presents the mapping of Rumah Betang values within the developed interactive e-module.

Rumah Betang Value	Communication/ Character Indicator	Learning Activity in the E-Module	Expected Learning Outcome
Togetherness	Collaboration and respectful communication	Students discuss speech topics and practice presentations collaboratively	Students communicate ideas while appreciating others' opinions
Tolerance	Respect for different opinions	Students respond to peers' presentations and provide constructive feedback	Students demonstrate respectful communication during discussions
Equality	Equal opportunity to express ideas	Each student delivers a speech individually using the e-module activities	Students participate actively and confidently in public speaking
Responsibility	Responsibility for learning tasks	Students complete independent learning activities, reflection tasks, and formative exercises	Students demonstrate responsibility in completing learning activities
Mutual Respect	Positive communication attitude	Students practice polite language and appropriate audience interaction during speeches	Students demonstrate confidence and respectful communication behavior

[Table 1](#) illustrates how the philosophical values of Rumah Betang were systematically integrated into the instructional design of the interactive e-module. Each cultural value was translated into specific communication and character indicators, implemented through contextual learning activities, and aligned with the expected learning outcomes. This mapping demonstrates that the integration of local wisdom functioned as a pedagogical framework rather than merely serving as cultural content.

Media Validation Results

The developed e-module was evaluated by a media expert to determine its feasibility and quality. The validation process assessed several aspects, including visual design, navigation, usability, content presentation, and overall functionality. The results showed that the e-module obtained a score of 48 out of 50, equivalent to 96%, which was categorized as "Very Valid". [Table 2](#) presents the results of the media validation.

Assessment Aspect	Score	Percentage	Category
Media Validation	48/50	96%	Very Valid

The high validation score indicates that the developed e-module meets the requirements of a quality digital learning resource and is suitable for classroom implementation.

Students' Self-Confidence Results

Students' self-confidence was measured before and after the implementation of the e-module. The results showed a substantial improvement in students' confidence levels after participating in learning activities using the developed e-module.

Table 3. Students' Self-Confidence Results

Indicator	Before Implementation	After Implementation
Mean Score	18.55	22.00
Percentage	74.18%	88.00%
Category	High	Very High

The findings indicate an increase of 13.82% in students' self-confidence. Students demonstrated greater willingness to express opinions, answer questions, and perform public speaking tasks in front of the class after using the interactive e-module.

Students' Public Speaking Performance

The effectiveness of the developed e-module was also evaluated through students' public speaking performance. Students obtained a mean public speaking performance score of 19.00 out of a maximum score of 20 (95%), which was categorized as Very Good. The assessment was based on students' performance in content organization, articulation, fluency, intonation, expression, and overall presentation using the developed scoring rubric.

Table 4. Public Speaking Performance Results

Indicator	Mean Score	Maximum Score	Percentage	Category
Public Speaking Performance	19.00	20	95.00	Very Good

The results indicate that students were able to organize speech content effectively, use appropriate language, demonstrate clear articulation, and deliver speeches with greater confidence and expression.

Discussion

The findings demonstrate that the Rumah Betang Philosophy-Based Interactive E-Module is valid, practical, and effective in supporting Indonesian language learning at the elementary school level. The high validation score (96%) indicates that the product possesses adequate visual quality, usability, and instructional design characteristics. According to Branch & Varank (2009), effective instructional products should undergo systematic evaluation to ensure their suitability for learning environments. The positive validation results suggest that the developed e-module successfully met these criteria. Similar results were obtained by Syukur et al. (2025), whose augmented reality-based teaching materials achieved high feasibility and effectiveness. These findings indicate that well-designed digital learning resources can enhance student engagement and learning outcomes across different educational contexts (Syukur et al., 2025).

The improvement in students' self-confidence supports Bandura & Adams (1977) theory of self-efficacy, which emphasizes that individuals' beliefs in their capabilities influence their motivation, behavior, and performance. Interactive learning activities provided by the e-module enabled students to engage actively in learning, practice public speaking repeatedly, and gradually develop confidence in expressing their ideas. This finding is also consistent with previous studies highlighting the significant relationship between self-confidence and speaking performance (Akbari & Sahibzada, 2020; Moneva & Tribunalo, 2020; Muin & Aswati, 2019; Novia et al., 2023).

The excellent performance achieved in public speaking activities may also be explained through the principles of self-regulated learning proposed by Zimmerman (2002). The digital format of the e-module allowed students to learn independently, revisit learning materials, and practice speaking activities at their own pace. Such opportunities contributed to greater mastery of speaking content and reduced anxiety when performing in front of an audience. These findings support previous studies by Setiawan et al. (2025), who found that digital learning environments encourage self-directed learning, and by Lathifah et al. (2025), who reported positive effects of interactive multimedia on students' learning performance (Lathifah et al., 2025; Setiawan et al., 2025).

Another important finding concerns the integration of local cultural values into digital learning resources. Similar findings were reported by Haryana et al. (2023), who developed a virtual learning module based on Saluan local wisdom and found that local cultural integration enhanced students' engagement and contextual understanding (Haryana et al., 2023). The incorporation of Rumah Betang philosophy provided meaningful contextual learning experiences while simultaneously strengthening students' cultural awareness. Previous studies have reported that culture-based learning contributes positively to character development and student engagement (Dwiputra & Sundawa, 2023; Rasidi & Istiningsih, 2025; Singh, 2022). In this study, the integration of Rumah Betang values not only supported communication skill development but also fostered positive attitudes such as responsibility, mutual respect, and self-confidence.

The novelty of this study lies in the combination of interactive digital learning technology and the philosophy of Rumah Betang within a single educational product. Unlike previous studies that focused either on digital learning media or cultural integration separately, this study demonstrates how both elements can be integrated to simultaneously improve public speaking skills and self-confidence among elementary school students.

CONCLUSION

This study successfully developed a Rumah Betang Philosophy-Based Interactive E-Module to enhance elementary students' public speaking skills and self-confidence. Developed using the ADDIE model, the e-module integrates public speaking materials with the local cultural values of the Rumah Betang philosophy, including togetherness, tolerance, responsibility, equality, and mutual respect. The media validation results indicated that the developed product was highly feasible for classroom implementation, achieving a validity score of 96%. The findings also demonstrated the effectiveness of the e-module in improving students' self-confidence and public speaking performance. Students' self-confidence increased from 74.18% to 88.00%, indicating an improvement of 13.82%, while public speaking performance reached 95%, categorized as very good. These results suggest that the integration of interactive digital learning media and local cultural values can create meaningful learning experiences that support both communication competence and character development among elementary school students. The main contribution of this study lies in combining technology-enhanced learning with the philosophy of Rumah Betang within a single educational product. This approach not only promotes students' speaking skills and self-confidence but also strengthens their appreciation of local cultural values. Therefore, the developed e-module can serve as an alternative learning resource for Indonesian language instruction at the elementary level. This study was limited to a small group of sixth-grade students in a single elementary school and involved only one media expert in the validation process. Future studies are recommended to involve larger participant groups, additional expert validators, and broader implementation contexts to further examine the effectiveness and scalability of the developed e-module.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS STATEMENT

Conceptualization, S.A., A.B., and I.P.; methodology, S.A. and A.B.; validation, A.B. and I.P.;

formal analysis, S.A.; investigation, S.A.; resources, S.A., A.B., and I.P.; data curation, S.A.; writing original draft preparation, S.A.; writing review and editing, A.B. and I.P.; visualization, S.A.; supervision, A.B. and I.P.; project administration, S.A.; and funding acquisition, S.A., A.B., and I.P. All authors have read and agreed to the published version of the manuscript.

AI DISCLOSURE STATEMENT

The authors declare that this manuscript was prepared, researched, written, and edited without the use of artificial intelligence (AI) tools or generative AI technologies. The data, research findings, analyses, and discussions presented in this manuscript are derived from the authors' original research conducted as part of a thesis study. The manuscript was developed based on the original research data, scientific analysis, and the authors' interpretation of the research findings. The authors take full responsibility for the accuracy, originality, integrity, and overall content of this publication.

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