

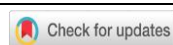
AGEMARA: MEDIUM TO ENHANCE EARLY READING LITERACY IN INDONESIAN LANGUAGE LEARNING (FEASIBILITY AND PRACTICALITY STUDY)

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ABSTRAK

Objective: This study aims to develop and test the feasibility and practicality of AGEMARA (Jepara Local Wisdom-Based Beginning Reading Application) as an innovative digital learning media to improve the beginning reading literacy skills of second-grade elementary school students. **Methods:** The research used the Research and Development (R&D) method with the ADDIE model, which includes analysis, design, development, implementation, and evaluation. Material, media, and language experts conducted feasibility testing, while practicality testing was obtained through teacher and student responses to the application's use. **Results:** Validation results showed that media experts at 69.3%, material experts at 80.4%, and language experts at 79.95% deemed AGEMARA feasible based on assessments. Meanwhile, the results of the practicality test showed a very practical category, with a score of 87.3% from teachers and 96.1% from students. The application was deemed attractive, easy to use, and relevant to the local cultural context of Jepara. **Novelty:** AGEMARA offers innovation in the form of integrating Jepara's local wisdom – including carvings, wayang krucil, and coastal traditions – into Android-based early reading lessons. This integration makes learning contextual and meaningful, and supports the strengthening of character and cultural literacy in elementary school students.

ABSTRAK

Objektif: Penelitian ini bertujuan untuk mengembangkan dan menguji kelayakan serta kepraktisan AGEMARA (Aplikasi Membaca Permulaan Berbasis Kearifan Lokal Jepara) sebagai media pembelajaran digital inovatif untuk meningkatkan kemampuan literasi membaca permulaan siswa kelas II sekolah dasar. **Metode:** Penelitian menggunakan metode Research and Development (R&D) dengan model ADDIE yang meliputi tahap analisis, desain, pengembangan, implementasi, dan evaluasi. Uji kelayakan dilakukan oleh ahli materi, media, dan bahasa, sedangkan uji kepraktisan diperoleh melalui respon guru dan siswa terhadap penggunaan aplikasi. **Hasil:** Hasil validasi menunjukkan bahwa AGEMARA dinyatakan layak berdasarkan penilaian ahli media sebesar 69,3%, ahli materi 80,4%, dan ahli bahasa 79,95%. Sementara itu, hasil uji kepraktisan menunjukkan kategori sangat praktis, dengan skor 87,3% dari guru dan 96,1% dari siswa. Aplikasi dinilai menarik, mudah digunakan, serta relevan dengan konteks budaya lokal Jepara. **Kebaruan:** AGEMARA menawarkan inovasi berupa integrasi kearifan lokal Jepara – meliputi ukiran, wayang krucil, batik, dan tradisi pesisir pantai Jepara ke dalam pembelajaran membaca permulaan berbasis Android. Integrasi ini menjadikan pembelajaran lebih kontekstual, bermakna, serta mendukung penguatan karakter dan literasi budaya siswa sekolah dasar.

Kata kunci: AGEMARA, Literasi Membaca Permulaan, Kelayakan, Kepraktisan

INTRODUCTION

Literacy rates and reading interest in Indonesia are still relatively low. PISA data shows that the reading ability of 15-year-old students lags behind that of neighboring countries. Student literacy and reading interest can determine the extent of their understanding and critical thinking skills (Rohman et al., 2022; Rosimasnita, 2021). Field conditions indicate a gap between the demands of early reading literacy learning and the availability of engaging learning media that meet students' needs. Based on observations and initial interviews with second-grade teachers at SD Negeri 2 Jobokuto, it was found that some students still experience difficulties in recognizing letters, reading syllables, and understanding simple reading materials. The learning process still relies heavily on conventional methods such as reading aloud and copying, which are less effective in fostering student interest and motivation. Furthermore, teachers acknowledged limitations in utilizing digital media or interactive technologies that are relevant to the local context and student characteristics.

Early reading literacy is usually taught to first grade students as a basic stage, where they learn the skills of reading and understanding the content of reading and can respond to the meaning of reading correctly (Lestari et al., 2021). Beginning reading is taught to students in grades 1 and 2, while advanced reading is taught starting from grade 3 (Rohman et al., 2022). Reading ability at the initial stage is very important for determining students' success in learning at the next level, because reading is the basis of all literacy skills (Lama et al., 2025; Soro & Awe, 2021). If students fail to master basic reading skills, they will face difficulties in understanding various other subjects that require text comprehension. Therefore, strengthening basic reading literacy needs to be designed with a fun, contextual approach, and utilize interactive media to increase students' motivation to learn (Laksana et al., 2022; Supriadi et al., 2025).

One way to overcome and improve students' literacy levels is by utilizing advances in digital technology which are now closer to children (Iskandar, 2019). The development of digital-based literacy media in elementary schools has been widely researched previously, such as the development of game-based pop-up book media (Fitriya et al., 2024), educational games based on local wisdom (Khasanah et al., 2023 & Oktaviany et al., 2025), interactive digital kargamca (reading picture cards) learning media to improve early reading skills (Saullila et al., 2023). In this research, we will develop a reading learning application, namely the AGEMARA (Application for Growing Early Reading Skills Based on Jepara's Local Wisdom) as an effort to improve the initial reading skills of elementary school students.

Using apps in early reading instruction provides students with significant opportunities for independent and interactive learning. Through audio features, animations, and structured reading exercises, apps can help students recognize letters, syllables, and gradually understand word meanings (Ginayah et al., 2024). Furthermore, teachers can use the app to support reading activities in class and at home, as it provides immediate feedback on student learning outcomes. Thus, using the app not only increases learning motivation but also makes it easier for teachers to evaluate and support the reading learning process.

Various applications have been developed to improve students' literacy interests and skills, particularly in early grades. For example, several studies have used Android-based applications that integrate animation, sound, and practice questions to support students in recognizing letters, syllables, and reading simple words (Erlina & Iswara, 2023; Fauziah, 2022; Ginayah, 2024; Khasanah et al., 2023; Muzdalifah & Subrata, 2022; Rahmi et al., 2023; Tiara, 2023).

This research is related to previous studies because they both focus on improving early reading literacy. However, most previously developed applications are still general in nature and do not integrate Jepara's local wisdom, which includes carving, local traditions, and culinary specialties. Therefore, the development of this learning media presents a strategic opportunity to create a contextual, engaging, and relevant reading learning experience for students.

The novelty of this research lies in the integration of Jepara local wisdom in media and early reading materials. In addition, this application is specifically designed for second-grade elementary school students with an interactive Android-based approach, so that it can be used flexibly and contextually to improve basic reading literacy. Meanwhile, the focus of this research is to design the AGEMARA application to improve the early reading literacy of second-grade students of SD Negeri 2 Jobokuto. (2) Testing the feasibility of the AGEMARA application based on the assessment of material experts, media experts, and practitioner experts. (3) Testing the practicality of the AGEMARA application in learning early reading literacy.

RESEARCH METHODS

This research uses the Research and Development (R&D) method using the ADDIE Robert Maribe Branch model development model Branch (2009). However, this research is limited to the implementation stage, because it only focuses on assessing the feasibility and practicality of the product. ADDIE stands for Analyze, Design, Development, Implement and Evaluate. In the Analysis stage, by identifying student needs, user characteristics, curriculum, and the potential of relevant local wisdom such as folklore and Jepara culture; Design, which includes designing learning content, designing a child-friendly application interface, as well as compiling storyboards and expert validation instruments; Development, namely the process of creating the AGEMARA application, integrating local cultural elements, and validating feasibility by material experts, media experts, and practitioner experts; Implementation, in the form of a limited trial in class II of SD Negeri 2 Jobokuto to see the effectiveness of using the application in learning to read beginnings; and Evaluation, which includes formative evaluation at each stage as well as summative evaluation through questionnaires, observations, and interviews to determine product feasibility, practicality, and effectiveness of the developed application.

1. Data Collection and Data Analysis Techniques

The subjects of this study were second-grade students of SD Negeri 2 Jobokuto. Seven students were asked to participate in a small-scale trial, while the remaining 13 students participated in a large-scale trial. The sampling technique used simple random sampling. Data collection techniques used were interview sheets, observation sheets, validation sheets from media experts and material experts, teacher and student response questionnaires, and pretest-posttest sheets for students' early reading literacy.

In this study, the research instrument used a Likert scale of 1-4, created in the form of a checklist. The Likert scale was used to convert validation and feasibility scores into percentages. After validation, the next step was a practicality test. This aimed to obtain practicality data through teacher and student responses. The results of these responses were in the form of scores that were converted into percentages. The expert assessment results were analyzed using the following formula.

$$P = \frac{f}{N} \times 100 \%$$

With the following information:

P = Final value

f = Score obtained

N = Maximum number of scores

The data analysis techniques used were descriptive qualitative and descriptive quantitative analysis. The criteria for the validity, practicality, and effectiveness of the resulting product refer to source (Arikunto, 2019) And Riduwan & Sunarto (2017) as follows.

Table 1. Product Validity Criteria

Interval	Category	Information
<21%	Totally Invalid	Totally unfeasible
21-40%	Invalid	Not feasible
41-60%	Quite Valid	Quite feasible
61-80%	Valid	feasible
81-100%	Very Valid	Very feasible

Table 2. Product Practicality Criteria

Interval	Category	Information
81-100%	Very Practical	No improvement
61-80%	Practical	A little improvement
41-60%	Quite Practical	A little improvement
21-40%	Less practical	Needs improvement
0-20%	Impractical	Needs improvement

RESULTS AND DISCUSSION

Results





The development stage of the AGEMARA (Application for Growing Early Reading Skills Based on Jepara's Local Wisdom) application is an important part of this research because it aims to produce interactive learning media that is appropriate and appropriate to the characteristics of second-grade elementary school students. The development process is carried out after the analysis and design stages are completed, focusing on the creation, validation, and refinement of the media so that it can be used optimally in early reading learning.


The AGEMARA application was designed using *Canva* and *Microsoft PowerPoint* for visual content creation and display design, which was then combined with *Heyzine* and *Appsgeyser* so that it could be converted into an Android-based application. In the design process, the Arimo typeface was used because it is simple, clear and easy to read by elementary school age children. The learning content contained in the application includes letter recognition, syllable formation, practice reading simple words and sentences, as well as understanding reading content adapted from the context of students' daily lives.

The uniqueness of AGEMARA lies in the integration of Jepara's local wisdom into every aspect of learning. Illustrations and text in the application display local cultural elements

such as Jepara carvings, Jepara batik, wayang krucil, and coastal community culture such as sea alms and the race festival that are close to children's experiences. This approach aims not only to improve early reading skills, but also to instill a love of regional culture. After the application was designed, media experts, material experts, and expert practitioners to assess the appropriateness of the content, appearance, language, and integration of local cultural elements carried out validation. The results of input and suggestions from experts were used to make revisions and improvements, so that the application was ready to be tested with students and teachers at SD Negeri 2 Jobokuto. The following is the design of the AGEMARA application.

Table 3.AGEMARA Application Design

Pages (Features)	Explanation
	The main display of the AGEMARA application is in the form of a cover and title of the learning material, there is a triangle button to start.
	The second page of the AGEMARA application contains instructions for use, in addition there are home and next buttons to start.
	The third page of the AGEMARA application is the initial reading material menu.
	Material page for recognizing letters of the alphabet and words

Pages (Features)	Explanation
	Material page for recognizing sentences

Media Feasibility Results

The Feasibility of the media in this study was obtained from the validation results by expert validators to determine the validity or suitability of the media. AGEMARA learning. The validity or feasibility of AGEMARA learning media is obtained from assessments conducted by media, materials, and language experts. The following is a summary of the validation results conducted by validators.

Table 4. Recapitulation of Media Feasibility Results

Expert Validator	Total Score	Percentage (%)	Criteria
Media Validator I	95	76	Feasible
Media Validator II	103	82.4	Very Feasible
Average	146.5	69.3	Feasible

Source: Researcher Data (2025)

Media expert validation was conducted by two validators by assessing six main aspects, namely layout, text, video, animation, audio, programming, and navigation. The assessment results showed that validator I gave a total score of 95 with a percentage of 76% and was included in the "Feasible" category, while validator II gave a score of 103 with a percentage of 82.4% and the "Very Feasible" category. Overall, the average media expert validation result reached 69.3% with the feasible criteria, so that the AGEMARA media was declared feasible for use in Indonesian language learning in elementary schools with several technical improvements.

First, Layout Aspect. Layout aspects include the accuracy of background selection, attractiveness of the display, and appropriateness of color proportions. Based on the validation results, the AGEMARA display is considered attractive, harmonious, and has a color combination that matches the characteristics of elementary school students. The selection of background and visual layout is considered appropriate because it does not interfere with learning focus. However, the validator provided input to adjust the color contrast of the writing with the background to improve readability.

Second, Text Aspect. Indicators for this aspect include font selection, font size, text color, text placement, and language usage. The validator assessed that the text in AGEMARA was clear, easy to read and used communicative language that was appropriate for the user's age. The choice of font type and font size was deemed appropriate, although it was suggested that the use of color in some parts of the text be strengthened to make it more prominent and not monotonous.

Third, Video Aspects. This aspect includes video composition, image transitions,

attractiveness, and display quality. Validation results show that the composition and image transitions in the video are quite smooth and engaging, and support the visual delivery of the material. The validator assessed the video as interactive and in line with the learning flow, but recommended improving the video resolution for a clearer and more professional display.

Fourth, Animation Aspect. The animation aspect of the assessment includes the appropriateness of the animation to the dubbing and the animation's appeal. The validator stated that the animation used was appropriate to the content of the material and the voice dubbing, thus helping students understand the concepts presented. The animation movement was considered attractive and proportional, although it is recommended to add more animation variations at the beginning to attract users' attention from the start of the application.

Fifth, Audio Aspect. This aspect includes the suitability of the background sound to the material, the accuracy of the background sound placement, and the placement of dubbing in the material. Based on the validation results, the background sound used in AGEMARA is considered appropriate to the learning atmosphere and does not distract students' focus. The voice dubbing sounds clear and in harmony with the visual display. The validator suggests that the volume between the background sound and dubbing be balanced for a more harmonious result.

Sixth, Programming Aspect. Assessment indicators for this aspect include the accuracy of audio placement, clarity of user flow, and completeness of user instructions. The validator assessed that the application's navigation flow and user instructions were clear, and users could use the application independently without significant difficulty. However, the validator added that the back button arrangement and transitions between pages could be made smoother to facilitate user navigation.

Seventh, Navigation Aspect. This aspect covers the accuracy of button placement and navigation functions. Based on the assessment results, the navigation buttons function well and are placed in easily accessible positions for users. The button display is considered attractive and does not distract from learning. The validator suggested that navigation icons be made more consistent and uniform across each page to make them easier for users to recognize.

Material Feasibility Results

Two validators carried out validation of material experts on AGEMARA media by assessing three main aspects, namely the quality of learning materials, the quality of learning design, and the quality of the display.

Table 5. Recapitulation of Material Feasibility Results

Expert Validator	Total Score	Percentage (%)	Criteria
Material Validator I	97	77.6	Feasible
Material Validator II	104	83.2	Very Feasible
Average	100.5	80.4	Feasible

Source: Researcher Data (2025)

The validation results show that AGEMARA media obtained a total score from validator I of 97 with a percentage of 77.6% and is included in the "Feasible" category, while validator II gave a score of 104 with a percentage of 83.2% and has the criteria "Very Feasible". Overall, the average material expert validation results reached 100.5 or 80.4%, so this media was declared feasible for use in learning Indonesian in elementary schools.

First, Aspect of Learning Material Quality. This aspect includes indicators of the suitability of the material to the learning objectives, the breadth and depth of the content, clarity of presentation, suitability to student characteristics, and the correctness of the concepts presented in the application. Based on the validation results, both validators agreed that the material in AGEMARA was in accordance with the learning objectives and characteristics of elementary school students. The material was considered relevant, clear, and structured coherently, although there were still several suggestions for improvement, especially in sharpening the content and depth of the material to make it more comprehensive. Thus, from the aspect of material quality, AGEMARA is classified as appropriate with a good level of clarity and relevance.

Second, Learning Design Quality. The learning design aspect was assessed through the clarity of the user manual, the clarity of the learning objectives, the completeness of the presentation, the attractiveness of the display, and the suitability of the activities for strengthening student character. The validation results showed that the user manual was clear enough, the learning objectives were well stated, and the material flow was logically arranged. In addition, the material presentation was considered interesting and interactive, especially in the section on strengthening the character of patriotism and student understanding of concepts. The validator provided notes so that the material flow could be presented more concisely and systematically. In general, this aspect was included in the very adequate category.

Third, Display Quality. The display aspect includes the application's ability to provide interaction to users, clarity of sentence writing, accuracy of language use, and clarity of subbing in delivering material. Based on the assessment results, the AGEMARA application display is considered attractive, interactive, and easy to operate. The language used is also communicative and appropriate to the language development level of elementary school students. The validator provided small suggestions to improve the consistency of terminology use and refine the wording of several sentences to make them more effective and easier to understand. Thus, the application's display quality is included in the very decent category.

Linguist Expert Feasibility Results

Validation by language experts was carried out to assess the accuracy and effectiveness of the linguistic aspects of the AGEMARA application, which include clarity of information, effectiveness of language use, suitability to student development, and the application of good and correct Indonesian language rules.

Table 6. Recapitulation of Linguist Expert Feasibility Results

Expert Validator	Total Score	Presentati on	Criteria
Language validator I	35	77.7%	Feasible
Language validator II	37	82.2%	Very Feasible
Average	36	79.95%	Feasible

Source: Researcher Data (2025)

The assessment conducted by two language expert validators showed that validator I gave a score of 35 with a percentage of 77.7% and was included in the "Feasible" category, while validator II gave a score of 37 with a percentage of 82.2% and was included in the "Very Feasible" category. Overall, the average validation result from language experts showed a score of 79.95% with the "Feasible" criteria, which means the AGEMARA

application, is feasible for use with some improvements in the linguistic aspects.

First, Information Clarity Aspect. In this item, the validator assessed that the information presented clearly discussed Jepara's local wisdom and was relevant to the context of Indonesian language learning in elementary schools. The material was deemed capable of describing local cultural values with communicative language, although it was suggested to add more variety to the explanations to further explore the cultural meaning.

Second, Aspect of Effective and Efficient Language Use. The validator gave a high score in this aspect because the sentences used in the application are concise, directly to the point of the discussion, and easy for students to understand. The use of sentence structure is considered appropriate for the characteristics of elementary school-aged readers, although there are some parts that require simplification of diction to be more efficient without reducing meaning.

Third, Aspect of Language Suitability to Student Developmental Level. The AGEMARA application is considered to use language appropriate to the age and developmental level of elementary school students. The sentences are not overly complex and are easy to understand. However, the validator suggested that certain terms be provided with additional explanations or concrete examples to help students better grasp their meaning.



Fourth, Aspect of Easy-to-Understand Language Use. Based on the assessment results, the language used in AGEMARA is communicative and does not create ambiguity in meaning. The choice of simple vocabulary and clear sentence structure makes it easy for students to follow the content. The validator assessed this aspect as good and does not require major revisions.





Fifth, Correct Use of EYD. Indonesian spelling rules in AGEMARA have generally been applied correctly, both in the use of capital letters, punctuation, and word writing. Only minor inconsistencies were found in the use of italics for foreign terms and commas, which need to be corrected to comply with the latest spelling rules.

Design Revision Results

Design revision is the process of improving, changing, and adding something to the initial design after the validation process. Design revisions aim to achieve the final design. Design revisions are made based on the comments and suggestions provided by expert validators on the validation sheet provided. The following is a media development revision based on comments and suggestions from media, material, and language validators.

Table 7. AGEMARA Design Revision

Suggestion	Before Revision	After Revision
Add the UMK logo and background using original images.		

Suggestion	Before Revision	After Revision
The color change button features a prominent feature.		
The letters need to be aligned and it is necessary to add local wisdom content to the image.		

AGEMARA Practicality Test Results

A practicality test of the AGEMARA application was conducted to determine its feasibility and ease of use in Indonesian language learning in elementary schools. The results of the practicality test are as follows.

Table 7. Recapitulation of Teacher Response Results

No	Indicator	Aspect	Score	Percentage (%)	Criteria
1.	Material	1-7	30	85.7	Very Practical
2.	Presentation	8-14	31	88.5	Very Practical
3.	Language	15-18	17	85	Very Practical
4.	Appearance	19-24	27	90	Very Practical
Total Score			105	87.3	Very Practical

Source: Researcher data (2025)

Table 8. Recapitulation of Student Response Results

No	Indicator	Aspect	Score	Percentage (%)	Criteria
1.	Appearance	1-5	46	92	Very Practical
2.	Material	6-9	39	97.5	Very Practical
3.	Presentation	10-13	38	95	Very Practical
4.	Language	14	10	100	Very Practical
Total Score			136	96.1	Very Practical

Source: Researcher data (2025)

The practicality assessment of AGEMARA media involved teachers and students as direct users of the application. Based on the questionnaire results, teachers obtained a total score of 105, representing 87.5%, while students obtained a total score of 136, representing 96.1%. Overall, these results indicate that the AGEMARA application is categorized as very practical for use as an interactive learning medium based on local wisdom.

First, Appearance Aspect. In the appearance aspect, teachers gave a very good assessment of the application's visual design, which includes the selection of colors, fonts, animations, and an attractive and easy-to-use layout. The appearance was considered capable of attracting students' attention and providing comfort in use. The results of student

assessments also showed similar things with a score of 46 and a percentage of 92%, which is included in the very appropriate category. Students felt that the appearance of the AGEMARA application was modern, attractive, and motivated them to learn more actively. Thus, the appearance aspect was considered very appropriate from both the teacher and student perspectives.

Second, Material Aspect. In terms of material, teachers assessed that the content in the application was in accordance with Core Competencies (KI) and Basic Competencies (KD), and aligned with learning objectives and student development levels. The material was presented clearly, equipped with relevant images and animations so that it was easy to understand. Meanwhile, students gave a very positive response with a score of 39 and a percentage of 97.5%, which is included in the very appropriate category. Students felt the material presented was easy to understand, interesting, and helped them understand learning concepts in a fun way. Therefore, the overall material aspect was very appropriate based on teacher and student assessments.

Third, Presentation Aspect. In the presentation aspect, teachers assessed that the AGEMARA application has a coherent, interactive learning flow, and is able to motivate students to learn. Features such as quizzes and games are considered effective in increasing student engagement and enthusiasm during the learning process. The results of student assessments also support this, with a score of 38 and a percentage of 95%, which is included in the very appropriate category. Students stated that the presentation of the material in the application feels fun and not boring because it is equipped with interactive elements. Thus, both groups of respondents consider the presentation aspect very appropriate.

Fourth, Language Aspect. From a language perspective, teachers assessed that the language used in the AGEMARA application was good, in accordance with correct Indonesian language rules, easy to understand, and appropriate for the abilities of elementary school students. The language used was communicative and supported clear understanding of the material. Students also gave a very positive response with a score of 10 and a percentage of 100%, which means very appropriate. They considered the language used to be simple, clear, and helped understand the learning content without difficulty.

Discussion

The development phase of the AGEMARA (Application for Growing Early Reading Skills Based on Jepara's Local Wisdom) application is a strategic step in creating interactive learning media that is contextual, innovative, and appropriate to the characteristics of elementary school students. The development process, from design, validation, revision, and practicality testing, shows that this application has met the eligibility criteria in terms of media, materials, and language.

Media Feasibility

Based on validation results by media experts, the AGEMARA application achieved an average feasibility percentage of 69.3%, categorized as Feasible. This score indicates that the application generally meets the technical and aesthetic aspects of digital learning media development. Similar research suggests that validation by media experts plays a crucial role in assessing the accuracy of information, clarity of concept presentation, and relevance of content to learning objectives (Wijaya et al., 2024). Thus, the validation results confirm that AGEMARA has been able to present media that supports the effectiveness of learning both visually and interactively.

In terms of layout, the validator assessed that the layout and color selection in AGEMARA were attractive and appropriate for elementary school students, although

contrast enhancements were needed for text readability. This assessment aligns with findings that proportional and harmonious visual displays improve student comfort and focus (Mahmudah et al., 2018).

The text aspect also received a positive assessment because the Arimo font was deemed appropriate for students' cognitive development levels. This aligns with the opinion of (Katzir et al., 2013). Selecting the right font and text size will improve readability and facilitate understanding of concepts for elementary-aged students. Meanwhile, the video and animation aspects were deemed engaging and relevant to the learning material, but it was suggested that the resolution and animation variety be improved for a more dynamic display.

In terms of audio, the background sound and dubbing are balanced with the learning atmosphere, although the volume needs to be adjusted to be more harmonious. This is in line with the opinion Cahyani et al., (2024); Siregar & Wirdati (2023) that proportional audio quality can improve students' comprehension and concentration in understanding the material. The programming and navigation aspects were appreciated because the button display and user flow were easy for students to understand, with minor suggestions for improving page transitions. Thus, these validation results confirm that AGEMARA has generally met the eligibility criteria for digital learning media, both in terms of visual design, interactivity, and ease of use for elementary school students.

Material Feasibility

The results of the validation by material experts showed that the AGEMARA application obtained an average score of 80.4%, categorized as Appropriate. This indicates that the material is aligned with the learning objectives, characteristics of elementary school students, and the local cultural context, in line with the view that good digital materials must be relevant to students' competencies, cognition, and lives (Ivoni Amelia, 2024). The content of the material is assessed according to the basic competencies of beginning reading, arranged systematically starting from letter recognition to simple reading comprehension, as suggested that a gradual structure from concrete to abstract improves students' literacy understanding (Anggraeni et al., 2025). The instructional design aspect was appreciated for providing clear instructions and interactive activities that encouraged student participation, in line with findings that interactivity strengthens learning motivation and retention (Munawir et al., 2024; Wulandari et al., 2025). The integration of local wisdom such as Jepara carving culture, wayang krucil, and coastal life is also considered to enrich the content and strengthen students' character values, as stated that local wisdom-based learning strengthens cultural identity and the noble values of the region (Setiawaty, Najikhah, Kristiyani, et al., 2025; Setiawaty, Najikhah, Wijayanto, et al., 2025). Overall, AGEMARA was deemed worthy and relevant because it presented systematic, interactive material, and contained educational local values.

Language Feasibility

Validation of the language aspect showed an average score of 79.95%, categorized as Adequate. The language aspect is crucial in early literacy media because it influences students' understanding of the material. The validator assessed that information on Jepara's local wisdom was presented clearly and appropriately to the learning context. The language used was effective, efficient, and communicative, making it easy for lower-grade elementary school students to understand. Furthermore, the sentence structure and vocabulary selection were deemed simple and appropriate for children's level of thinking development. There were only a few notes regarding the consistency of terminology and the application of the

latest Indonesian Spelling Rules (EBI). This aligns with the principles of early literacy, which emphasize the importance of presenting simple, consistent, and meaningful texts (Hiebert & Raphael, 2015; Majorano et al., 2021; Maureen et al., 2018).

Practicality Test by Teachers and Students

The practicality test phase involved teachers and students as direct users of the application. The results showed that teachers gave a score of 87.3% and students 96.1%, both of which fall into the Very Suitable category. In terms of appearance, both teachers and students found AGEMARA's design attractive and easy to use. The colors, fonts, and animations were deemed appropriate for the characteristics of elementary school-aged children. This aligns with research findings that confirm that attractive and consistent visual design can increase students' motivation and focus when using digital media (Putri et al., 2025; Wahidin, 2025). In terms of material, teachers assessed that the content was in line with the curriculum and easy to convey, while students considered the material interesting and easy to understand. This is in line with the opinion of Rosyada et al. (2025) & Sapitri et al. (2025) that learning media that presents curriculum-aligned material and is based on interactive activities can strengthen students' conceptual understanding. The presentation aspect received very high marks, as the application provides interactive activities such as quizzes and simple games that increase learning motivation. Regarding the language aspect, both agreed that the application's main strengths were its communicative and easy-to-understand language.

Development Implications

Overall, the validation and practicality test results indicate that AGEMARA falls into the appropriate to very appropriate category for use as an interactive learning medium for beginning reading. The use of the Android-based application facilitates access for teachers and students, in line with the digital transformation of elementary education (Riyan, 2021; Wicaksono et al., 2025). Therefore, AGEMARA has the potential to be further developed into thematic and integrative learning versions across subjects.

CONCLUSION

Based on the findings, it can be concluded that the AGEMARA (Application for Growing Early Reading Skills Based on Jepara's Local Wisdom) application is feasible and practical to use as an interactive learning medium for early reading based on local wisdom for elementary school students. This application is considered attractive in terms of appearance, relevant to learning objectives, and communicative in the use of language, with expert validation results showing the category of Feasible and practicality tests for teachers and students reaching the category of Very Feasible. The integration of Jepara cultural elements has been proven able to enrich the learning context and foster students' love for local values. However, this study has limitations on the trial scale, which is still limited to one school and has not measured the effectiveness of improving learning outcomes quantitatively, so further research is needed to test the impact of using AGEMARA on improving early reading skills more broadly and in depth.

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