The development of the cristal multimodal booklet to strengthen students' growth mindset in elementary schools

Esty Yuliana Rabiah Aswadah[1], Nurul Istiq'faroh[1], Wahyu Sukartiningsih[1]

[1]State University of Surabaya, Jalan Lidah Wetan, Kecamatan Lakarsantri, Surabaya, Jawa Timur, 60213
Corresponding author, email: nurulistiqfaroh@unesa.ac.id.

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Abstract
This study aims to develop a CRISTAL Multimodal Booklet designed to strengthen students' growth mindset in elementary education. Growth mindset refers to students' belief that abilities can improve through sustained effort, effective strategies, and constructive feedback. Using a Research and Development (R&D) approach adapted from the ASSURE model, this study focuses on developing and validating the booklet for fifth grade students. The CRISTAL Booklet integrates multimodal elements including text, images, icons, and QR code based digital resources organized into critical reading and interactive speaking activities that support reflective and adaptive learning. The validity of the product was assessed through expert evaluations involving media experts, material experts, and language experts. The results demonstrate that the booklet achieved a "highly valid" category across all aspects, with average scores above 86%, indicating strong alignment with content standards, visual design principles, and linguistic clarity appropriate for elementary learners. These findings confirm that the CRISTAL Multimodal Booklet is a valid instructional product suitable for supporting growth mindset oriented learning in Indonesian language education

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1. Introduction

The development of digital technology has brought about significant changes in the way students acquire, understand, and process information (Ali et al., 2024; Alshammari & Alkhwaldi, 2025; Hakim & Yulia, 2024). This transformation demands increased digital literacy starting in elementary school. Students are now faced with various forms of information representation, such as text, images, sound, and video, which require more complex thinking skills (Dewi, 2025a). This challenge requires learning that can respond to children's needs in the era of multimodality. However, many learning media in elementary schools still focus on conventional text, which is not well-suited to the learning characteristics of the digital generation (Faiza & Wardhani, 2024; Salam et al., 2024; Sugiantoro et al., 2025; Zheng et al., 2024). This situation creates a gap between student needs and the learning media used. Therefore, media innovations that can systematically integrate multimodality are needed.

Indonesian language learning plays a crucial role in developing students' critical thinking and speaking skills (Nafili & Pramowardhani, 2024). These skills serve as the foundation for students to understand texts, interpret meaning, and convey ideas in a structured manner. In the digital era, these skills must be strengthened by the ability to process multimodal information (Putri et al., 2024a; Ramadhan et al., 2025; Wang et al., 2024). However, the reality on the ground shows that many students are unable to accurately interpret visual or audiovisual information. This indicates the need for learning that provides multimodal-based learning experiences. Thus, the integration of multimodal media in Indonesian language learning is an urgent need. Good learning media must be able to facilitate students in constructing meaning from various sources critically.

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One emerging issue is students' weak growth mindset, a fundamental mindset that influences their thinking and learning processes (Mulyanti, 2025; Termini et al., 2024). Many students lack the cognitive readiness to identify important information, analyze simple problems, or express opinions systematically (Marta et al., 2025). A weak growth mindset makes it difficult for students to understand text-based and multimodal materials (Annafis, 2025a; Dewi, 2025c; Jasmine et al., 2025; Yigci et al., 2025). This problem hinders Indonesian language learning, which ideally demands in-depth understanding and effective communication. Another factor exacerbating the situation is the lack of learning media designed to suit the characteristics of elementary school students. This indicates a gap between student needs and available media. Therefore, strengthening a growth mindset is a crucial focus in learning.

Initial observations in several elementary schools indicate that students' critical thinking and speaking skills remain low. Students struggle to convey ideas, explain reasons, and respond to questions meaningfully. Teachers also reported that students lack confidence and tend to be passive in oral communication. Furthermore, the use of digital devices like Chromebooks is suboptimal due to the lack of easily understood learning guides. Available media are not yet capable of facilitating structured multimodal learning. This situation indicates the need for learning media that can strengthen students' basic mindsets while simultaneously improving their thinking and speaking skills. Therefore, innovative media are needed to bridge these challenges.

One alternative solution is the development of the multimodal-based CRISTAL (Critical Reading, Interactive Speaking, and Technology-Assisted Learning) booklet. This booklet is designed as a medium that combines verbal, visual, and digital elements to improve the quality of learning. Through activities such as critical reading and interactive speaking, students are expected to develop deeper understanding. The integration of technology, such as QR codes, provides a more interactive and flexible learning experience (Fajar et al., 2025). This medium allows students to learn independently and collaboratively. Furthermore, this booklet is designed with an easy-to-understand approach that suits the characteristics of elementary school students. Thus, the CRISTAL Multimodal Booklet can be an effective tool for strengthening students' growth mindsets.

Theoretically, the development of this booklet is based on constructivism and multimodal literacy theory. Constructivism emphasizes that students construct knowledge through experience and active exploration (Julia et al., 2024; Syafila & A'yun, 2024). Meanwhile, multimodal literacy explains that modern learning requires an understanding of various types of meaning representation (Campbell & Olteanu, 2024; Daulay & Dewi, 2025). Both theories emphasize that learning media must be able to provide rich and meaningful experiences. In this context, multimodal booklets are an ideal medium for integrating text, visuals, and digital interactions. Furthermore, multimodal media allows students to process information through multiple cognitive channels simultaneously. Thus, this theoretical basis supports the relevance of developing the CRISTAL Booklet. This medium can be an effective instrument in the Indonesian language learning process.

Research (Ariyani et al., 2025) shows that learning media designed according to students' needs, such as differentiation-based picture cards, are proven to be valid, practical, and effective in improving elementary school students' speaking skills. These findings confirm that media innovations that integrate visuals and language activities in a structured manner are essential to support the development of students' communication skills from an early stage, thus reinforcing the urgency of developing multimodal media such as the CRISTAL Booklet in Indonesian language learning. Research (Liyawindari et al., 2023) shows that fictional story E-Book media validated through the ADDIE model is proven to be very valid, practical, and effective in improving elementary school students' writing skills through structured and engaging presentation of materials. These findings confirm that digital media innovations that integrate visuals, text, and multimodal presentations are essential to strengthen students' literacy skills, thus supporting the urgency of developing the CRISTAL Booklet as a multimodal medium to improve critical

thinking and speaking skills in Indonesian language learning. Research (Sukartiningsih et al., 2020) shows that balanced literacy teaching materials are crucial to support the competency of PGSD students as prospective elementary school teachers, particularly in strengthening basic literacy skills in a balanced manner, in line with the demands of the Curriculum and the School Literacy Movement. This finding reinforces the urgency of developing multimodal learning media such as the CRISTAL Booklet, which not only emphasizes reading and speaking literacy but also integrates various modes of representation to build a stronger literacy foundation starting in elementary school.

Several previous studies have shown that multimodal media can improve literacy, learning motivation, critical thinking skills, and speaking skills in elementary school students (Mecriyani et al., 2025; Putri et al., 2024b). However, most studies have focused on the use of videos, flipbooks, or digital applications without providing systematic, easy-to-follow guidance for students. Few studies have developed multimodal booklets that combine digital guidance and higher-order thinking activities. Furthermore, no research has specifically integrated the concept of growth mindset into Indonesian language learning media. This indicates a research gap that needs to be filled through the development of new media. The CRISTAL Multimodal booklet aims to fill this void. Therefore, this research has both theoretical and practical urgency.

Based on the problems and previous research reviews, this study aims to develop a valid, practical, and effective multimodal CRISTAL booklet to strengthen the growth mindset of elementary school students. This research is important to ensure that learning media can function as a guide that can improve students' critical thinking and speaking skills. In addition, this research is expected to produce media that is easy to use in various learning situations. The findings of this study will contribute to the development of multimodal media for elementary school level. The research also strengthens the discourse on the importance of technology integration in Indonesian language learning. Thus, this research is expected to be a reference for teachers, curriculum developers, and educational researchers. This research seeks to present real solutions to the challenges of learning in the digital era.

2. Method

This study used a Research and Development (R&D) method with the ASSURE model to produce a valid, practical, and effective CRISTAL Multimodal booklet for elementary school students. Development was carried out through needs analysis, objective formulation, media selection, product development, expert validation, limited trials, and classroom implementation. The research subjects were fifth-grade students at SD Negeri 1 Bringin, which has implemented the Independent Curriculum and has supporting facilities such as Chromebooks and internet access. Data collection was conducted through expert validation, observation, practicality questionnaires, pre- and post-tests, and interviews to ensure comprehensive findings. Data analysis included feasibility percentages, practicality percentages, qualitative observation analysis, N-Gain calculations, and triangulation to strengthen the validity of the findings. Using these procedures, the CRISTAL booklet was systematically developed and declared suitable as a multimodal learning medium in elementary schools.

Table 1. Research Design and Development Model

Component	Description
Research Design	Research and Development (R&D)
Development Model	ASSURE (Analyze Learner, State Objectives, Select Methods/Media, Utilize Materials, Require Participation, Evaluate & Revise)
Development Objective	To produce a valid, practical, and effective CRISTAL Multimodal Booklet

Component	Description
Product Focus	CRISTAL Booklet (Critical Reading, Interactive Speaking, Technology-Assisted Learning)
Key Product Characteristics	Multimodal (text, images, audio/video via QR codes), critical reading & interactive speaking activities
Research Output	Instructional media to enhance ground mindset, critical thinking, and speaking skills

Table 1 shows that this research design is based on the principles of educational product development that require iterative evaluation. The ASSURE model was chosen for its systematic structure in analysis, media selection, implementation, and revision. This approach ensures that the development of the CRISTAL Booklet is focused and produces a product that meets the needs of elementary school students. The research design serves as a reference for determining the subjects, data collection techniques, and procedures for assessing media effectiveness. Subject selection was conducted purposively so that the media would be tested on students with appropriate developmental characteristics and a learning environment that supports the use of multimodal media. Therefore, the selection of the design, subjects, and research location ensured that the trial process was optimal and relevant to the objectives of the media development.

Table 2. Research Subjects and Location

Component	Description
Subjects	5th-grade elementary school students
Number of Subjects	Approximately 20–30 students
Location	Elementary school implementing the Merdeka Curriculum with digital facilities
Collaborating Teacher	5th-grade classroom teacher
Sampling Basis	Purposive sampling
Supporting Facilities	Chromebooks, internet, mobile phones, digital and printed booklet

Table 2 shows that this study involved elementary school students with access to digital devices, enabling optimal implementation of multimodal media. Purposive subject selection ensured appropriate user characteristics. A technology-supportive school environment and teacher involvement as collaborators further enhanced the effectiveness of the learning process. These conditions enabled booklet testing to provide an accurate picture of the media's validity, practicality, and effectiveness. To obtain comprehensive data, the study utilized various data collection techniques tailored to the aspects being evaluated. The combination of quantitative and qualitative techniques enabled triangulation analysis, resulting in more comprehensive and reliable research results.

Table 3. Data Collection Techniques

Technique	Purpose	Data Collected	Instrument
Expert Validation	To assess product feasibility	Material, media, and language validity	Validation sheet
Observation	To observe learning activities	Student behavior during learning	Observation sheet
Questionnaire	To assess practicality	Student and teacher responses	Practicality questionnaire
Pre-test	To measure initial ability	Critical thinking & speaking	Initial test
Post-test	To measure improvement	Learning outcomes after using the media	Final test
Interview	To strengthen data	User opinions	Interview guide

Table 3 shows that the data collection techniques in this study covered all aspects necessary for a comprehensive media evaluation, from expert validation to user observations and questionnaires. Pre- and post-tests were also used to measure the booklet's effectiveness in improving student skills, resulting in in-depth and accurate data. This combination of techniques enabled more precise interpretation of the research results through a triangulation approach. To ensure systematic data processing, the research instruments were clearly and measurably structured according to the evaluation objectives. These instruments included assessments of the material, language, visual presentation, learning activities, and students' critical thinking and speaking skills.

Table 4. Research Instruments

Instrument	Indicators	Measurement Purpose	Output
Material Validation	Content, presentation, language	To assess the feasibility of booklet content	Validity score
Media Validation	Visual, technical, multimodal	To assess appearance and ease of use	Validity score
Language Validation	Clarity & age appropriateness	To assess language quality of the booklet	Validity score
Student Questionnaire	Ease of use, attractiveness	To measure booklet practicality	Practicality percentage
Teacher Questionnaire	Appropriateness & ease	To measure practicality of implementation	Practicality percentage
Observation	Learning activities	To assess student engagement	Observation notes
Critical Thinking Test	Interpretation–explanation	To evaluate critical thinking	Pre–post score
Speaking Test	Fluency, vocabulary, coherence	To evaluate speaking ability	Scoring rubric

The research instruments presented in the table cover all important aspects for assessing media quality, from expert validation to questionnaires and observations that illustrate actual booklet use. Test instruments were also used to objectively measure student learning outcomes, further strengthening the research findings. With structured and objective-oriented instruments, this research was able to produce valid and reliable data. The media development stages followed the ASSURE model, which emphasizes student characteristic analysis, media selection, implementation, and revision. Each stage was carried out sequentially to ensure the CRISTAL Booklet development procedure truly met user needs.

Table 5. Product Development Procedure

ASSURE Stage	Activity Description
Analyze Learners	Analyzing student characteristics, prior knowledge, and needs
State Objectives	Formulating learning objectives based on learning outcomes (CP)
Select Methods/Media	Selecting multimodal approaches, methods, and media
Utilize Materials	Implementing the booklet in classroom learning
Require Participation	Critical reading, discussion, and speaking activities
Evaluate & Revise	Expert validation, trial testing, revision, and final evaluation

Table 5 shows that the CRISTAL Booklet development process was carried out systematically, following the stages of the ASSURE model, ensuring the media was theoretically sound and effective for use in the classroom. Each stage was accompanied by a revision process to improve product quality so that the final result better met students'

needs. This structured procedure allows for replication of the media development in other learning contexts. The ASSURE model is also flexible, allowing it to be adapted by various educational institutions. After the development procedure was completed, the appropriate data analysis technique was determined through a combination of quantitative and qualitative analysis based on the characteristics of the research data.

Table 6. Data Analysis Technique

Aspect	Analysis Technique	Formula / Procedure	Output
Validity	Quantitative descriptive	Validity percentage	Valid / highly valid
Practicality	Percentage analysis	Σ response score / ideal score × 100%	Practical / highly practical
Observation	Qualitative analysis	Reduction–display–verification	Activity patterns
Effectiveness	N-Gain	(Post – Pre) / (Max – Pre)	High / medium / low
Interview	Thematic analysis	Coding and categorization	Qualitative supporting data

Table 6 shows that data analysis techniques are designed to systematically process data from various sources. Quantitative analysis is used to assess validity, practicality, and improvement in learning outcomes. Meanwhile, qualitative analysis helps strengthen interpretations through observation and interview data. The combination of these two approaches provides a comprehensive overview of media quality. With appropriate analysis techniques, research results can be scientifically validated.

3. Results

The results of this study indicate that the development process for the CRISTAL Multimodal Booklet using the ASSURE model resulted in a product that meets validity standards for use in Indonesian language learning in elementary schools. Expert validation was conducted to assess the appropriateness of the material, the quality of the media design, and the linguistic aspects. All three validators gave a rating of "very valid," with an average percentage above 86%. These findings indicate that the booklet aligns with the learning competencies of phase C and is suitable for use as a multimodal learning medium.

Table 7. Expert Validation Results for the CRISTAL Multimodal Booklet

Validation Aspect	Validator 1	Validator 2	Validator 3	Average	Category
Content	85%	88%	90%	87.7%	Highly valid
Media/Design	84%	86%	89%	86.3%	Highly valid
Language	88%	90%	92%	90.0%	Highly valid

The validation results in Table 7 indicate that the CRISTAL Multimodal Booklet met the eligibility standards, covering content, visual presentation, and language aspects. Regarding the material aspect, the experts assessed that the content, activity structure, and multimodal integration were appropriate for the learning outcomes and characteristics of elementary school students. Critical reading and interactive speaking activities were deemed relevant and capable of encouraging student engagement in multimodal literacy-based learning.

The validation results indicate that the CRISTAL Multimodal Booklet received very high ratings from the validators, particularly for its media and design aspects, which were deemed systematic, engaging, and consistent with the use of illustrations, icons, and QR codes. The page design was deemed proportional and supported readability, although some minor revisions related to layout and visuals were recommended. Regarding the language

aspect, the booklet was deemed highly valid due to its use of communicative sentences, vocabulary appropriate to students' cognitive development, and easy-to-understand instructions. The validators only suggested minor improvements related to the consistency of instructions and technical terms. All feedback was used to refine the visual presentation and instructional structure prior to limited trials. Overall, the booklet was deemed highly suitable for use in Indonesian language learning in elementary schools.

Figure 1. Collection of booklet contents

The validation of the instrument and product in this study was conducted systematically to ensure the validity and feasibility of the CRISTAL Multimodal Booklet as an instructional medium. The validation process involved three expert validators consisting of a material expert, a media expert, and a language expert. Each validator used a validation sheet developed based on measurable indicators, including alignment of content with learning outcomes, appropriateness of the CRISTAL activity structure, quality of visual and multimodal design, language clarity, and suitability for elementary school students' developmental characteristics. The validation scores were analyzed using a feasibility percentage technique to determine the product's validity category. The results showed that the booklet achieved an average score above 86% across all assessed aspects, categorizing it as highly valid and appropriate for use as a learning medium. These findings strengthen the claim of product validity, as they are supported by indicator-based expert evaluations rather than merely descriptive judgments.

The validity of the CRISTAL Multimodal Booklet was further reinforced by qualitative feedback provided by the validators. The material expert confirmed that the content and learning activities were aligned with Phase C competencies and were capable of stimulating students' critical thinking and speaking skills. The media expert emphasized that the visual design, use of illustrations and icons, and integration of QR codes met readability standards and were visually engaging for elementary school students. Meanwhile, the language expert stated that sentence structure, vocabulary selection, and activity instructions were appropriate for students' cognitive development levels. Minor revision suggestions were addressed during the product revision stage, thereby strengthening the final validity of the booklet as a multimodal instructional medium.

4. Discussion

The results of the booklet's validity study indicate that CRISTAL Multimodal has high suitability for use in Indonesian language learning. The high validation score demonstrates that the booklet's content and presentation align with multimodal literacy theory. Regarding the material aspect, the booklet's content is considered to reflect constructivist principles, where students are guided to construct meaning through exploration. The validators also emphasized that critical reading activities can develop students' analytical skills. The media aspect received a high score due to its simple yet engaging visual design for elementary school students. This demonstrates that multimodal media is highly relevant for 21st-century learning (Al-Muttairi & Al-Alusi, 2025; Dewi, 2025b; Harun & Singh, 2024). These findings align with previous research that suggests multimodal media increases student engagement in learning (Olvah et al., 2024).

The high practicality of the media indicates that the booklet is easy to use in real-life learning contexts. Teachers found it helpful because the booklet provided a coherent learning flow, requiring minimal adjustments. Students also found the booklet's activities convenient because they could be done independently or in groups. This finding supports the concept of student-centered learning, which places students as the primary subjects in the learning process (Salsabila, 2024). Furthermore, the integration of technology through QR codes was deemed highly engaging by students (Ulum et al., 2025). This reinforces the argument that the use of simple technology in print media can enhance learning effectiveness. Therefore, the CRISTAL booklet has a good level of functionality for use in elementary schools.

The multimodal learning presented in booklets provides students with the opportunity to understand information through various representations. The diversity of modes, such as text, images, and videos, provides a richer learning experience. Previous research has shown that diverse representations can enhance students' conceptual understanding (Jin, 2025; Miranti et al., 2024). This was evident in this study through the increase in students' critical thinking scores after using the booklets. Furthermore, activities that require students to connect information from various modes help strengthen their fundamental thinking patterns. This process is central to strengthening a growth mindset in learning. Therefore, the CRISTAL booklet can be considered an effective medium for facilitating multimodal learning.

Improved students' critical thinking skills also indicate that the booklets successfully accommodate important indicators such as analysis, inference, and evaluation. The gradual critical reading activities help students develop these skills systematically. These findings are consistent with the theory that multimodal literacy-based learning can improve students' reasoning abilities (Annafis, 2025b; Romine et al., 2024). Furthermore, the activities in the booklet require students to evaluate information before expressing their opinions. Teachers also noted that students were more confident in presenting arguments during class discussions. This indicates a transformation in the way students process information and respond. Therefore, the CRISTAL booklet is effective in developing students' critical thinking skills.

The improvement in students' speaking skills after using the booklet demonstrates that this medium not only strengthens cognitive aspects but also communication skills. Interactive speaking activities require students to express ideas orally with a clear structure. Based on teacher assessments, students demonstrated greater fluency and vocabulary accuracy compared to before using the booklet. These findings support the theory that language learning involving multimodality can strengthen spoken language production (Hadizadeh, 2025; Sholikhah, 2024). Furthermore, audio examples available via QR codes help students understand effective communication models. This demonstrates that technology integration plays a significant role in boosting students' confidence. Thus, the booklet contributes to the development of essential oral communication skills in Indonesian language learning.

The booklet's success in strengthening students' growth mindsets is also evident in their increased ability to connect information from various sources. A growth mindset is developed through learning experiences involving observation, analysis, and reflection. In this study, students demonstrated improved ability to select information, re-explain it, and provide evidence-based opinions. This aligns with the concept that multimodal learning can strengthen fundamental thinking patterns by activating multiple cognitive pathways (Holley & Parkhurst, 2019; Laili, 2022). Teachers also noted that students demonstrated greater independence in completing complex tasks. Thus, the booklet plays a role in shaping students' cognitive and emotional readiness to face learning challenges. A strong growth mindset is crucial for supporting continuous learning development.

The findings of this study support several previous studies emphasizing the importance of innovative media in developing 21st-century skills. The CRISTAL Multimodal booklet reinforces digital literacy, critical thinking, and communication as core competencies essential for elementary school students. Furthermore, the integration of simple technology within the booklet demonstrates that innovation does not always require sophisticated devices. This research confirms that print-based multimodal media can still be effective if supported by appropriate design and activities. These findings also add to the growing body of references for developing ASSURE-based learning media in elementary school contexts. Thus, the research findings provide theoretical and practical contributions to elementary education. It is hoped that this research will serve as a foundation for the development of advanced learning media.

The findings of this study also align with global trends indicated by a bibliometric study of Language Virtual Laboratories in higher education (Istiq'faroh et al., 2023), which confirmed that virtual laboratory-based and multimodal learning has experienced a significant increase in the past decade. The bibliometric analysis revealed that key themes such as virtual laboratory learning, laboratory systems, and implementation techniques have become a dominant focus because they are considered capable of increasing student engagement and understanding through integrated multimodal representation. This alignment is evident in the use of the CRISTAL Booklet, which presents a systematic multimodal-based learning experience through text, visuals, and QR code-assisted digital access, thus reflecting the main characteristics of the elementary school version of the virtual laboratory. In other words, although the context of this study is at the elementary school level, the multimodal structure and interactive learning flow implemented share similar pedagogical principles with global trends in the development of virtual learning environments. This indicates that learning media innovations at the elementary level, such as the CRISTAL Booklet, have broad relevance and are moving in line with the direction of international research developments on virtual laboratory-based learning technology. Thus, this research not only provides a practical contribution to Indonesian language learning, but also strengthens the position of multimodal literacy as an approach that is consistent with global research developments in digital learning transformation.

The findings of this study are also related to the development of AI-based children's storybooks conducted by Istiq'faroh et al. (2025), which emphasized the importance of designing learning media that is appropriate to the cognitive development of elementary school students. In that study, expert validation reached more than 92%, indicating that digital media designed with simple language, attractive illustrations, and an appropriate level of readability can significantly increase students' reading interest and learning motivation. This condition is in line with the results of the development of the CRISTAL Multimodal Booklet, where expert validation showed a very valid category and students responded positively to the visual display, activity flow, and QR code integration that supports multimodal learning. Both studies confirmed that aligning content with children's developmental characteristics is a key factor in the success of innovative learning media. Furthermore, the success of AI-based storybooks in increasing reading interest supports the findings of this study that multimodal media designed with a systematic approach can strengthen students' growth mindsets, increase engagement, and facilitate critical thinking

and speaking skills more effectively. Thus, the integration of simple and AI-based technologies both contribute to the transformation of the quality of learning in elementary schools and are relevant to the direction of modern educational media development in Indonesia.

The results of this study are also relevant to the findings (Hendratno et al., 2023) regarding the effectiveness of the field trip method in improving elementary school students' descriptive writing skills. This study demonstrated that learning that provides hands-on experiences and involves multisensory interactions can broaden students' understanding of real objects and situations, resulting in better writing quality. This principle aligns with the multimodal approach in the CRISTAL Booklet, which provides a rich learning experience through text, visuals, and digital access, enabling students to construct meaning more concretely. Both field trips and multimodal media emphasize the importance of providing authentic and engaging learning contexts to improve students' language skills. Furthermore, similar to the findings of the field trip method, which showed significant improvements through observation and description activities, the CRISTAL Booklet also fosters observation, analysis, and articulation skills through critical reading and interactive speaking activities. Thus, this study strengthens the evidence that experiential and multimodal learning strategies are effective approaches for strengthening a grounded mindset, improving language skills, and facilitating deeper understanding in elementary school students. In general, the results and discussion indicate that the CRISTAL Booklet is a superior multimodal learning medium for improving students' abilities. This medium is not only valid and practical, but also has a positive impact on the development of students' mindset, critical thinking skills, and speaking skills. Furthermore, this medium is relevant to the needs of the Independent Curriculum, which emphasizes independent learning and the use of technology. These results indicate that media innovation needs to be continuously developed to meet the demands of digital learning. This study also reinforces the importance of multimodal literacy as an adaptive learning approach. Therefore, the CRISTAL Booklet can be recommended for wider implementation in elementary schools. Further research can be conducted to develop a fully digital version of this booklet.

5. Conclusion

This study concludes that the CRISTAL Multimodal Booklet is a valid, practical, and effective learning medium for Indonesian language learning in elementary schools, as demonstrated by expert validation results and positive responses from teachers and students. The integration of text, images, and QR codes provides a multimodal learning experience that helps improve students' critical thinking and speaking skills. Effectiveness analyses, such as N-Gain, indicate significant improvements in student performance after using the booklet. Furthermore, the booklet is considered flexible, easy to use, and supports independent and collaborative learning without the need for special devices. Therefore, the CRISTAL Booklet is worthy of recommendation as an innovative and relevant learning medium for the demands of the 21st century.

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