

## Validity Analysis of the CRISTAL Multimodal Booklet for Improving Critical Thinking and Speaking Skills in Elementary Indonesian Language Learning

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**ABSTRACT:** This study aims to analyze the validity of the CRISTAL booklet (Critical Reading, Interactive Speaking, and Technology-Assisted Learning) as a multimodal learning media for Indonesian language instruction in elementary schools. The CRISTAL booklet was developed to address challenges related to low critical thinking skills, limited speaking ability, and suboptimal use of digital devices, particularly Chromebooks, in learning. Using the ASSURE development model, the study conducted expert validation involving material, media, and language specialists to evaluate the accuracy, clarity, relevance, and feasibility of the booklet. The results indicate that the CRISTAL booklet meets the criteria of a valid instructional product, reflected through high validation scores across aspects of content suitability, multimodal integration, design coherence, language clarity, and its potential to stimulate critical thinking and spoken interaction among students. The findings affirm that the CRISTAL booklet is suitable for use in Indonesian language learning, especially in supporting students' critical thinking and speaking skills through structured, meaningful, and technology-enhanced learning activities. This validity confirmation also strengthens the product's readiness for practical implementation and further effectiveness testing in classroom settings.

**KEYWORDS:** CRISTAL booklet, multimodal literacy, Indonesian language learning, critical thinking, speaking skills, ASSURE development model.

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### INTRODUCTION

The advancement of digital technology has transformed educational practices worldwide, requiring schools to integrate technological tools into daily learning activities (Kirschner & De Bruyckere, 2017) (Collins & Halverson, 2018). In Indonesia, national digitalization programs have expanded access to devices such as Chromebooks in elementary schools (Anggraini & Rahmawati, 2023) (Lestari et al., n.d.). However, many students still lack the ability to use digital resources effectively during learning activities (Buwono & Dewantara, 2020). This difficulty reduces their opportunities to interact with diverse learning materials and develop higher-order thinking skills. As a result, students' digital literacy remains below optimal expectations in the context of 21st-century learning. Therefore, there is a need for learning media that guide students in utilizing technology while supporting cognitive development.

Language learning plays an essential role in shaping students' communication and reasoning abilities, particularly in Indonesian language instruction (Mu'minah, 2021). Research suggests that language learning activities must engage students in reading, analyzing, and expressing ideas to develop critical thinking (Soleh & Arifin, 2021) (Gao, 2010; SWARGIARY, 2024). However, classroom practices often rely heavily on textbooks, resulting in limited opportunities for interactive learning (Kayatin, 2022). This condition can reduce student motivation and hinder progress in speaking skills. As a consequence, many elementary learners struggle to articulate ideas clearly and respond appropriately in discussions. Such challenges highlight the need for innovative instructional materials.

Multimodal literacy has emerged as an effective approach for enhancing comprehension, engagement, and communication in learning environments (Kress & Van Leeuwen, 2006). Through multimodal materials, students interact with text, visuals, audio, and dynamic digital elements that deepen their understanding (Unsworth, 2023) (Mills, 2015; Serafini, 2014; Sindoni & Moschini, 2021). Studies show that multimodal resources foster critical thinking by requiring learners to interpret information across multiple representational modes (Murcia, 2014) (Istiq'faroh et al., 2025). Additionally, multimodal texts improve students' ability to express ideas verbally by providing structured visual prompts (Altas, 2014). These advantages make multimodal media especially suitable for elementary learning contexts. Therefore, integrating multimodal design into Indonesian language materials can support essential literacy competencies (Rahmadani & Anas, n.d.; Sukartiningsih et al., 2020).

## Validity Analysis of the CRISTAL Multimodal Booklet for Improving Critical Thinking and Speaking Skills in Elementary Indonesian Language Learning

The CRISTAL booklet (Critical Reading, Interactive Speaking, and Technology-Assisted Learning) was developed as a multimodal learning resource to address these instructional needs. The booklet integrates digital elements, such as QR-linked videos and interactive tasks, to guide students in using technology productively (Mulyani et al., 2024). Its structured activities aim to strengthen critical reading skills and oral communication through scaffolded learning tasks. By combining visual, textual, and auditory input, the booklet encourages students to construct meaning actively. Furthermore, the booklet promotes collaborative speaking activities that enhance students' confidence and fluency. Thus, the CRISTAL booklet serves as an innovative medium for Indonesian language learning.

In educational product development, validity is a crucial indicator of quality and alignment with curriculum standards (Nieveen, 1999). Validity ensures that instructional materials reflect accurate content and appropriate pedagogical design (Prahani et al., 2017). Expert validation provides insights into how well the media supports learning objectives and student characteristics. Without proper validation, a learning product may fail to provide the intended educational benefits. For this reason, analyzing the validity of the CRISTAL booklet is necessary before classroom implementation. This process also strengthens the credibility of the product for future research stages (Istiq'faroh & Setiawan, 2024).

The ASSURE model was chosen as the framework for developing the CRISTAL booklet due to its systematic and technology-oriented structure (Smaldino et al., 2015). The model emphasizes learner analysis, instructional objectives, media selection, and evaluation, aligning closely with modern instructional design needs (Achmadi et al., 2014). It enables developers to integrate technology meaningfully into instructional materials. Additionally, ASSURE promotes iterative evaluation, ensuring continuous improvement based on expert feedback (Sejati & Koeswanti, 2020). This structured approach enhances the pedagogical soundness of the final product. Therefore, the ASSURE model is highly suitable for developing multimodal learning media.

Based on these considerations, this study aims to analyze the validity of the CRISTAL multimodal booklet for Indonesian language learning. The study evaluates the accuracy and coherence of the booklet's content, design, and language based on expert judgment. This assessment is essential for determining whether the booklet aligns with curricular expectations and supports students' critical thinking and speaking skills (Zakaria et al., 2021). The validation results also serve as a foundation for further testing of practicality and effectiveness. This research contributes to the development of multimodal instructional resources in elementary education. Ultimately, the study supports efforts to improve learning quality in the digital era.

## METHODS

This study employed a Research and Development (R&D) design aimed at producing a learning media product that is valid, practical, and effective (Prahani et al., 2017). The ASSURE instructional design model was selected because it emphasizes systematic integration of technology into learning environments (Smaldino et al., 2015). The choice of this model aligns with the characteristics of multimodal media development, which requires structured and learner-centered planning. The research focused primarily on the validation phase to assess the appropriateness of the CRISTAL booklet before classroom use. Validation was conducted on material, media, and linguistic aspects by experts in relevant fields. Thus, the selected method ensures that the developed product meets educational quality standards (Ningsih et al., 2018).

The first stage in the ASSURE model is analyzing learner characteristics to determine the suitability of the CRISTAL booklet for its intended users (Sejati & Koeswanti, 2020). This analysis involved classroom observations and interviews with teachers to gather preliminary information about students' abilities. The data collected included students' speaking skills, critical thinking capacities, and basic digital literacy competencies. These findings informed the learning needs that the booklet must address. The results of the learner analysis served as a foundation for determining content structure and instructional design. Therefore, this stage ensured alignment between media components and learner profiles.

The second stage involved defining learning objectives based on the Indonesian Kurikulum Merdeka, specifically the "Speaking and Presenting" element in Phase C (Kemendikbud, 2022). The objectives focused on improving students' critical thinking and oral communication skills through structured learning activities. These objectives guided the development of the content, activities, and multimodal components of the CRISTAL booklet. During this stage, validation instruments were also developed, including material expert sheets, media expert sheets, and language expert sheets. These instruments were used to assess the quality of the booklet according to pedagogical and multimodal design principles. As a result, the objective-setting stage ensured focused and measurable development outcomes.

The third stage of the ASSURE model involved selecting strategies, media, and materials that support learning goals (Achmadi et al., 2014). The CRISTAL booklet was designed using a multimodal approach integrating text, visuals, videos, and interactive digital elements. Each component was chosen to support students' critical thinking processes and oral interaction within Indonesian language learning. The initial draft of the booklet was developed using digital design platforms such as Canva. After drafting, the booklet underwent expert validation using the developed instruments. This stage ensured the media met instructional design principles and aesthetic standards.

## Validity Analysis of the CRISTAL Multimodal Booklet for Improving Critical Thinking and Speaking Skills in Elementary Indonesian Language Learning

The fourth stage—utilizing the media—was conducted through limited preliminary trials after the product received validity confirmation from experts (Nieveen, 1999). The limited trial aimed to observe teacher and student responses before conducting broader practicality and effectiveness testing. Because this research focused on validity analysis, implementation was carried out in a restricted and simulation-based format. Teachers were consulted regarding the usability and instructional functionality of the booklet. Feedback from this preliminary use was incorporated into product refinement. Consequently, this stage supported iterative improvements of the media.

The fifth stage emphasized learner participation, reflecting one of the core principles of the ASSURE model (Smaldino et al., 2015). In this study, learner participation was assessed through simulated use and initial student responses to the booklet. Students evaluated visual appeal, clarity of instructions, and ease of use through structured questionnaires. The questionnaires provided systematic insight into students' perceptions of the learning media. These responses helped determine whether the booklet offered meaningful and engaging learning experiences. Thus, this stage ensured the media was assessed from the learner's perspective.

The final stage involved evaluating and revising the booklet based on expert validation and user feedback (Prahani et al., 2017). Evaluation consisted of calculating validity percentages to classify the booklet as valid, sufficiently valid, or invalid. Expert comments and suggestions were used to revise the content, layout, and language where necessary. Revisions were carried out until the booklet met validation criteria and was deemed suitable for further testing of practicality and effectiveness. This stage ensured the product reached optimal quality before implementation in real classroom settings. Therefore, evaluation and revision played a crucial role in guaranteeing product readiness.

Overall, this research method was designed to produce a high-quality multimodal learning media aligned with the needs of elementary school learners. The ASSURE model provided a structured process for analyzing learners, designing objectives, selecting materials, and evaluating outcomes. Expert validation ensured that the CRISTAL booklet aligned with curriculum standards and modern instructional principles. The results of the validation phase provide a strong foundation for subsequent studies on practicality and effectiveness. As a result, the method not only ensured product quality but also contributed to the advancement of Indonesian language learning in the digital era.

## RESULT AND DISCUSSION

### Research Results

#### Expert Validation Results of the CRISTAL Booklet

Before conducting practicality testing and classroom implementation, the first step carried out in this study was expert validation. This validation involved three main aspects: material validation, media validation, and language validation. The purpose of this stage was to ensure that the CRISTAL booklet met the required quality standards as a learning medium before it was used in actual classroom settings. Experts assessed indicators such as content feasibility, multimodal accuracy, visual coherence, and linguistic suitability for elementary students. The validation results were then analyzed in percentage form to determine the category of validity.

**Table 1. Expert Validation Results of the CRISTAL Booklet**

| No | Validator       | Aspect Evaluated                        | Score (%)  | Category          |
|----|-----------------|-----------------------------------------|------------|-------------------|
| 1  | Material Expert | Quality and relevance of content        | 92%        | Very Valid        |
| 2  | Media Expert    | Design, layout, multimodal integration  | 90%        | Very Valid        |
| 3  | Language Expert | Clarity and appropriateness of language | 94%        | Very Valid        |
| —  | <b>Average</b>  | —                                       | <b>92%</b> | <b>Very Valid</b> |

Based on Table 1, the average validation result reached **92%**, indicating that the CRISTAL booklet is categorized as **very valid**. The material expert noted that the content aligns with Indonesian language learning objectives and supports the development of critical thinking and speaking skills. This result is consistent with Mu'minah (2021), who states that structured and relevant learning media can enhance students' interaction with texts. The media expert also concluded that the integration of multimodal elements such as images, text, and digital links was coherent, supporting the argument of Kress and Van Leeuwen (2006) that multimodality improves learners' comprehension. From the linguistic perspective, the validation revealed that the booklet is easy to understand and appropriate for elementary learners, consistent with Atas (2014), who emphasizes the importance of simple language in children's learning materials.

# Validity Analysis of the CRISTAL Multimodal Booklet for Improving Critical Thinking and Speaking Skills in Elementary Indonesian Language Learning

## Practicality Results from Teachers and Students

Following expert validation, the next step was to assess the practicality of the CRISTAL booklet based on responses from teachers and students. Practicality refers to ease of use, clarity of instructions, visual attractiveness, and the extent to which the medium supports student engagement during learning activities. Questionnaires were distributed to one teacher and several Grade 5 students to gather initial data regarding their experiences using the booklet. This assessment is instrumental in determining whether the media can be effectively utilized in actual classroom conditions.

**Table 2. Practicality Assessment of the CRISTAL Booklet**

| No | Respondent     | Practicality Score (%) | Category              |
|----|----------------|------------------------|-----------------------|
| 1  | Teacher        | 89%                    | Practical             |
| 2  | Students       | 91%                    | Very Practical        |
| —  | <b>Average</b> | <b>90%</b>             | <b>Very Practical</b> |

Table 2 shows that the practicality level of the CRISTAL booklet falls into the **very practical** category, with an average score of **90%**. Teachers reported that the booklet facilitated the delivery of material and supported structured speaking activities. Students found the booklet engaging and easy to follow, consistent with Kayatin (2022), who found that visual and multimodal media increase student motivation and participation in language learning. These practicality findings also align with Smaldino et al. (2015), who assert that media developed using the ASSURE model are typically easier to implement because they are designed based on comprehensive learner analysis.

## Alignment of the CRISTAL Booklet with Learning Objectives

Beyond validity and practicality, it is also essential to examine the extent to which the CRISTAL booklet aligns with the learning objectives of Phase C Indonesian Language instruction. Alignment was evaluated based on the compatibility of booklet activities with indicators of critical thinking, speaking ability, and digital literacy competencies.

**Table 3. Alignment of the CRISTAL Booklet with Learning Objectives**

| No | Component                    | Score (%)  | Category              |
|----|------------------------------|------------|-----------------------|
| 1  | Critical Thinking Indicators | 94%        | Well Aligned          |
| 2  | Speaking Skill Indicators    | 92%        | Well Aligned          |
| 3  | Digital Literacy Support     | 93%        | Highly Aligned        |
| —  | <b>Average</b>               | <b>93%</b> | <b>Highly Aligned</b> |

The results in Table 3 indicate that the CRISTAL booklet is **highly aligned (93%)** with learning objectives. Activities such as visual analysis, guiding questions, story retelling, and structured presentations support the findings of Murcia (2014), who reported that multimodal representation enhances students' critical thinking abilities. Additionally, the use of QR codes and digital elements aligns with Buwono & Dewantara (2020), who highlight the importance of digital-based learning tools in building modern literacy competencies.

## DISCUSSION

Overall, the results of this study show that the CRISTAL multimodal booklet is highly valid, highly practical, and strongly aligned with Indonesian language learning goals. The high validation score demonstrates that the booklet meets pedagogical standards required to support the development of students' critical thinking and speaking skills. This reinforces the findings of Soleh & Arifin (2021), who highlight that reflective questioning and analytical activities significantly improve students' critical thinking. From the media design perspective, the integration of multimodal elements enriches the learning experience, supporting Kress & Van Leeuwen's (2006) theory that multimodality broadens students' pathways of meaning-making.

The practicality results also show that the CRISTAL booklet is easy to use and visually engaging—an important factor contributing to student engagement. These findings align with Atlas (2014), who notes that visually appealing learning materials enhance student participation. Meanwhile, the use of the ASSURE model during development ensured that the media was aligned with learners' characteristics and instructional needs. This supports Smaldino et al. (2015), who affirm that ASSURE is effective for creating learner-centered and technology-integrated instructional materials.

Furthermore, the strong alignment between the booklet and the Phase C learning objectives indicates that the media effectively supports competency development expected in the Kurikulum Merdeka. The integration of digital literacy components

## Validity Analysis of the CRISTAL Multimodal Booklet for Improving Critical Thinking and Speaking Skills in Elementary Indonesian Language Learning

also supports students' acquisition of 21st-century skills, consistent with the conclusion of Buwono & Dewantara (2020) on the importance of digital learning tools. Structured speaking activities within the booklet further reinforce Alwasilah's (2012) findings that continuous, guided speaking practice enhances learners' oral communication confidence.

Thus, the findings show that the CRISTAL booklet has strong potential for broader implementation in elementary Indonesian language classrooms. Future research should focus on testing its **effectiveness** through experimental designs using pre-post assessments to measure learning gains. If the booklet is proven effective, it can be recommended for wider adoption as a multimodal learning medium that enhances students' critical thinking and speaking skills.

### CONCLUSIONS

This study concludes that the CRISTAL multimodal booklet is a highly valid and practical learning medium for supporting Indonesian language instruction in elementary schools. The expert validation results demonstrated an average score of 92%, indicating that the content, media design, and language usage meet the standards required for high-quality instructional materials. The practicality results, with an average score of 90%, further confirmed that both teachers and students found the booklet easy to use, visually engaging, and supportive of meaningful learning interactions. The strong alignment score of 93% also shows that the booklet effectively supports the learning objectives of critical thinking, speaking competence, and digital literacy as outlined in the Phase C curriculum.

Furthermore, the integration of multimodal elements—such as text, images, guiding questions, and digital QR-linked resources—successfully enhanced student engagement and provided varied pathways for constructing meaning. These findings reinforce previous studies that emphasize the effectiveness of multimodal learning materials in improving comprehension, communication, and higher-order thinking skills. Based on the overall results, the CRISTAL booklet is ready for broader classroom implementation and further testing of its effectiveness through experimental or quasi-experimental research. Future studies are recommended to examine learning gains through pre-test and post-test measures, allowing a more comprehensive evaluation of its impact on students' critical thinking and speaking performance.

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## Validity Analysis of the CRISTAL Multimodal Booklet for Improving Critical Thinking and Speaking Skills in Elementary Indonesian Language Learning

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