



Developing Printable Reading Test to Foster Reading Comprehension among Pesantren Students in Low-Technology Environments in Closed Tests

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Abstract

This study aims to develop and evaluate a printable reading comprehension test specifically designed for pesantren students in low-technology learning environments. Utilizing the ADDIE instructional design model—comprising Analysis, Design, Development, Implementation, and Evaluation—the research addresses the digital divide and material constraints often found in religious educational settings. The methodology employed a Research and Development (R&D) design involving ten students from MA Al Mahrusiyah at Daru Zainab, selected through purposive sampling. Data collection involved a printable closed-test format, specifically a fill-in-the-blank assessment, supplemented by semi-structured interviews to capture qualitative insights. Quantitative results indicated a significant improvement in reading proficiency, with mean scores rising from 5.40 in the pretest to 9.10 in the post-test. A paired-sample t-test confirmed this improvement was statistically significant ($p < 0.05$). Qualitative findings further revealed that the structured, context-sensitive nature of the test helped students focus on deeper meaning rather than guessing. While the study is limited by its small sample size and short-term scope, it demonstrates that systematic instructional design can bridge the gap between pedagogical theory and real-world educational constraints. Ultimately, this research provides a feasible and effective alternative for fostering reading comprehension in under-resourced environments where digital tools are impractical.

Keywords: reading comprehension, printable reading test, ADDIE model, pesantren context

1. INTRODUCTION

Literary work is valued as a work of art with a literary style which is a different form that we use in daily life. There are two types of literary work, either creative writing or the study of what is written (Fikri & Octora, 2023). The study of what is written can be as reading comprehension. Reading comprehension is a fundamental component of language learning that plays a crucial role in students' academic achievement and lifelong learning. It involves not only decoding written symbols but also understanding, interpreting, and critically engaging with texts. In this regard, the idea of visual literacy is one that is gaining more and more attention in the classroom, particularly in attempts to enhance reading comprehension (Fikri, Lestari, et al., 2024). Effective reading comprehension enables learners to identify main ideas, draw inferences, synthesize information, and monitor their own understanding while reading (Day et al., 2024). For this reason, reading comprehension is widely regarded as a core skill in English language education.

Despite its importance, many students experience difficulties in developing reading comprehension skills, particularly in low-resource and low-technology learning environments. Literacy is becoming increasingly important in daily life and academics in this era of increasingly evolving technology (Fikri, Sintania, et al., 2025). In Indonesian pesantren, students are required to study a wide range of texts, including kitab kuning, Arabic religious texts, and general academic materials. However, learning in pesantren is often characterized by limited access to digital tools, online reading platforms, and technology-based assessments. As a result, students may struggle to develop vocabulary knowledge and higher-order comprehension skills effectively. Wu et al. (2021) emphasize that learners in under-resourced contexts require instructional approaches that are sensitive to linguistic and material constraints in order to enhance comprehension outcomes.

One of the biggest issues facing education today is getting children more interested in reading (Fikri, Pratama, et al., 2025). In the current digital era, reading instruction increasingly relies on interactive applications, online texts, and technology-supported assessments. While these innovations provide significant benefits, they may not be accessible or practical in pesantren settings. The use of learning media that is often used is print media in the form of books, modules, handouts, and so on (Fikri, Zulaikah, et al., 2024). Therefore, alternative instructional and assessment solutions are needed. Previous studies highlight that structured reading materials, scaffolded exercises, and formative assessments can significantly improve reading comprehension when they are

designed according to learners' needs and contexts (Day et al., 2024; Schiavo et al., 2021). Rezasoltani et al. (2022) further argue that systematic instructional design models can support effective learning outcomes, even when adapted for low-technology environments.

Based on these challenges, this study aims to develop a printable reading comprehension test for pesantren students using the ADDIE instructional design model. The research objectives of this study are: (1) to analyze the reading comprehension needs of pesantren students; (2) to design and develop a printable reading test that aligns with students' comprehension levels and contextual conditions; and (3) to evaluate the effectiveness of the developed reading test in supporting students' reading comprehension skills.

This study is expected to contribute both theoretically and practically. Theoretically, it enriches the literature on reading comprehension assessment in low-technology and religious educational contexts. Practically, it provides teachers and educators in pesantren with a feasible, structured, and context-sensitive assessment tool that can be implemented without reliance on digital technology. By applying the ADDIE model, this study bridges pedagogical theory and real-world educational constraints, offering a humanized approach to improving reading comprehension in pesantren settings.

2. METHODOLOGY

This chapter describes the research methodology employed in this study, including the research design, setting, participants, research procedures, data collection instruments, data analysis techniques, and strategies for ensuring validity and reliability. The study focuses on developing a printable reading comprehension test to support pesantren students in low-technology learning environments. The ADDIE instructional design model was applied as the main framework, guiding the research process from analysis to evaluation. Both quantitative and qualitative data were collected through closed tests and interviews to obtain a comprehensive understanding of students' reading comprehension and learning needs.

Research Design

This study employed a Research and Development (R&D) design structured around the ADDIE model, which consists of Analysis, Design, Development, Implementation, and Evaluation. Each phase of the ADDIE model was integrated into the research process as follows. The analysis phase focused on identifying students' reading comprehension levels, existing instructional materials, and contextual constraints in low-technology pesantren settings. This phase aimed to determine students' learning needs and challenges as the basis for test development.

The design phase involved developing the blueprint of the printable reading test, including learning objectives, closed-test items, test format, and scoring criteria. The closed-test format was selected to ensure objective and measurable assessment of reading comprehension. The development phase focused on constructing the printable reading test based on the design specifications. The test items were reviewed and validated by experts to ensure clarity, relevance, and alignment with learning objectives. Pilot testing was conducted to refine the test items before implementation.

The implementation phase involved administering the finalized closed test to the participants to collect quantitative data on reading comprehension. In addition, qualitative data were gathered through interviews to explore students' perceptions, difficulties, and learning experiences. The evaluation phase analysed both quantitative and qualitative data to determine the effectiveness of the developed reading test. The results were used to revise and improve the test's validity, practicality, and usability.

Research Setting and Participants

The study was conducted at Daru Zainab, involving students from MA Al Mahrusiyah who showed an interest in learning English. A total of ten students participated in the study. Participants were selected using purposive sampling to ensure diversity in reading proficiency levels and engagement with the learning materials. This selection was intended to provide representative insights into students' reading comprehension in the pesantren context.

Research Procedure

The research procedure followed the ADDIE model and was adapted to the context of developing a printable closed reading test. During the analysis phase, classroom observations and preliminary assessments were conducted to identify students' existing reading comprehension levels and challenges in understanding texts. In the design phase, a test blueprint was developed, outlining closed-test items designed to objectively measure reading comprehension. Scoring rubrics were also prepared to ensure consistency and clarity in assessment.

The development phase involved creating the test materials and conducting expert validation. Revisions were made based on feedback to improve clarity and alignment with instructional goals. In the implementation phase, the finalized closed reading test was administered to all participants. Quantitative data were collected from pretest and Post-test scores, while qualitative data were obtained through semi-structured interviews. Finally, in the evaluation phase, both quantitative and qualitative data were analysed. The results provided insights into students' reading comprehension improvement and informed recommendations for refining the printable reading test.

Data Collection Instruments

This study employed both quantitative and qualitative instruments to obtain comprehensive data. The primary quantitative instrument was a printable closed reading test using a fill-in-the-blank format, in which key words were removed from the text. This format required students to understand the context and reconstruct meaning, thereby measuring reading comprehension effectively. The test was administered as a pretest to identify initial comprehension levels and as a Post-test to measure improvement after the intervention.

Qualitative data were collected through semi-structured interviews with selected participants. The interviews aimed to explore students' experiences, difficulties, and attitudes toward reading using printable materials in a low-technology environment. Open-ended questions allowed participants to express their views freely. Interview data were transcribed and analysed thematically to identify key patterns and insights.

Data Analysis

Quantitative data from the pretest and post-test were analysed using descriptive statistics, including mean and standard deviation. A paired-sample t-test was conducted to determine whether there was a significant improvement in students' reading comprehension. Qualitative data from interviews were analysed using thematic analysis. The data were coded to identify recurring themes related to reading difficulties, comprehension strategies, and students' perceptions of the printable reading test.

Research Validity and Reliability

Several strategies were employed to ensure the validity and reliability of the study. Content validity was established through expert validation by specialists in reading comprehension and Islamic education. Construct validity was ensured by designing test items that measured key comprehension skills, including contextual understanding, vocabulary knowledge, and inference-making.

Reliability was addressed through pilot testing with students outside the main sample. Test-retest reliability was examined, and items were revised based on feedback to enhance clarity and consistency. For qualitative data, credibility was strengthened through member checking, in which participants reviewed interview transcripts to confirm accuracy. Triangulation between quantitative and qualitative data further enhanced the trustworthiness of the findings.

3. RESULTS AND DISCUSSIONS

Results

This section presents the quantitative results of the pretest and post-test scores obtained from the closed reading comprehension test. The data were analysed to examine students' reading comprehension improvement after the implementation of the printable reading test.

Descriptive Statistics of Pretest and Post-test Scores

Table 1 presents the descriptive statistics of students' reading comprehension scores before and after the intervention.

Table 1. Descriptive statistics of pretest and post-test scores

Test Type	N	Minimum	Maximum	Mean	Standard Deviation
Pretest	10	3	8	5.40	1.51
Post-test	10	8	10	9.10	0.74

(Source: Research data)

The table shows that the mean score of the pretest was 5.40, indicating a relatively low level of reading comprehension prior to the intervention. After the implementation of the printable reading test, the post-test mean score increased to 9.10, suggesting a substantial improvement in students' reading comprehension.

Normality Test

Before conducting inferential analysis, a normality test was performed to determine whether the data were normally distributed. The Shapiro–Wilk test was used due to the small sample size.

Table 2. Normality test results (shapiro–wilk)

Test	Statistic	df	Sig.
Pretest	0.956	10	0.746
Post-test	0.941	10	0.587

(Source: Research data)

The significance values for both pretest (0.746) and post-test (0.587) are greater than 0.05, indicating that the data are normally distributed. Therefore, a paired-sample t-test was appropriate for further analysis.

Paired-Sample T-Test

A paired-sample t-test was conducted to examine whether there was a significant difference between students' pretest and post-test scores.

Table 3. paired-sample t-test results

Paired Samples	Mean Difference	Std. Deviation	t	df	Sig. (2-tailed)
Pretest – Post-test	-3.70	1.16	-10.07	9	0.000

(Source: Research data)

The result indicates a statistically significant difference between pretest and Post-test scores ($p < 0.05$). This finding confirms that the implementation of the printable reading test significantly improved students' reading comprehension.

4.2 Discussions

The findings of this study demonstrate that the printable closed reading test developed using the ADDIE model effectively enhanced students' reading comprehension in a low-technology pesantren context. The significant increase in Post-test scores indicates that structured and context-sensitive assessment tools can support meaningful comprehension development.

The improvement aligns with Day et al. (2024), who emphasize that structured reading materials and comprehension-monitoring strategies contribute to better understanding of texts. The closed-test format required students to actively engage with the text by reconstructing meaning, which encouraged deeper cognitive processing rather than surface-level reading.

Furthermore, the results support Wu et al. (2021), who argue that learners in under-resourced environments benefit from instructional approaches that consider linguistic and material constraints. The printable format used in this study addressed the technological limitations of pesantren settings while still providing an effective assessment tool.

Qualitative findings from interviews (reported in the appendix) further reinforced these results. Students reported that the printable test helped them focus on understanding the context of the text rather than guessing answers. This supports Schiavo et al. (2021), who highlight the importance of attention-driven strategies in improving reading comprehension.

Overall, the findings suggest that applying the ADDIE framework to develop printable assessment tools is a practical and effective solution for fostering reading comprehension in low-technology educational environments. This approach bridges pedagogical theory and real classroom conditions, making it particularly relevant for pesantren-based education.

4. CONCLUSIONS

This study aimed to develop and evaluate a printable reading comprehension test for pesantren students in low-technology learning environments using the ADDIE instructional design model. The findings indicate that

the developed test effectively improved students' reading comprehension. Quantitative results from the pretest and Post-test analysis showed a statistically significant increase in students' scores after the implementation of the printable reading test. This improvement demonstrates that structured and context-sensitive assessment tools can support meaningful reading comprehension development even in settings with limited access to digital resources.

In addition, qualitative findings from student interviews revealed positive perceptions of the printable reading test. Students reported that the closed-test format helped them focus on understanding the context and meaning of the text rather than relying on memorization or guessing. These findings suggest that the integration of systematic instructional design and printable materials can enhance students' engagement and comprehension in pesantren contexts.

Despite these positive outcomes, this study has several limitations. First, the number of participants was relatively small and limited to a single pesantren, which may affect the generalizability of the findings. Second, the study focused on short-term improvements in reading comprehension; therefore, long-term effects of the printable reading test were not examined. Finally, the assessment was limited to a closed-test format, which may not fully capture other dimensions of reading comprehension, such as critical reflection or extended written responses.

Based on these limitations, several suggestions are proposed for future research and practice. Future studies are recommended to involve larger and more diverse samples across different pesantren to enhance the generalizability of results. Longitudinal research designs could be employed to examine the sustained impact of printable reading assessments over time. In addition, future research may integrate other assessment formats, such as open-ended questions or collaborative reading tasks, to provide a more comprehensive evaluation of students' reading comprehension. For practitioners, the findings suggest that printable, well-designed assessment tools based on the ADDIE model can be effectively implemented as an alternative to digital assessments in low-technology educational environments.

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