Jurnal Ilmiah Pendidikan Guru Sekolah Dasar
Oktober 2026, XII (2), 20 - 27
P-ISSN: 2085 – 4048
https://journal.unj.ac.id/unj/index.php/pgsd/

Development of Mind Map-Based Pocket Book Media for Active and Passive Sentence Material in Grade II Indonesian Language Learning

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Abstract

Second-grade students often struggle to identify sentence elements and to convert active sentences into passive ones, and the textbooks available to them are difficult to study independently. This study aimed to describe the procedure for developing a mind map-based pocket book on active and passive sentences for Grade II Indonesian language learning and to determine its feasibility. Research and development (R&D) was carried out with the ADDIE model (analyze, design, develop, implement, evaluate) at SDN Jati 05 Pagi, East Jakarta, from January to June 2025, involving 29 Grade II students. Data were collected with expert-validation questionnaires and a 16-item, four-point student response questionnaire, and analysed descriptively. Three experts (subject matter, language, and media) validated the product, which was then tried out in a one-to-one test (n = 3), a small-group test (n = 9), and a field test (n = 17). The A6-size pocket book, which combines mind maps, illustrations, games, and QR codes linked to videos and an online evaluation game, obtained expert feasibility scores of 82.5% (subject matter), 95.5% (language), and 93.1% (media), averaging 90.3%, and student response scores of 92.2%, 89.1%, and 87.9%, averaging 89.7%. All scores fall in the "very good" category, so the product is feasible as supplementary learning media. Its effect on learning outcomes still needs to be tested in an experimental study.

Keywords: pocket book media; mind map; active and passive sentences; Indonesian language; ADDIE

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How to Cite: *Asyahilah Nurul Choirunisa. (2026). Development of Mind Map-Based Pocket Book Media for Active and Passive Sentence Material in Grade II Indonesian Language Learning, Jurnal Ilmiah Pendidikan Guru Sekolah Dasar, XII (2): 20-27*

INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and process in which learners actively develop their potential (Republik Indonesia, 2003). In this process, teachers' communication and students' language proficiency determine how well learning material is understood. Indonesian language learning in primary school is therefore central, because it equips children with competencies they need in every subject (Samiha et al., 2023; Suparlan, 2020), yet teachers still

report barriers, challenges, and strategies specific to teaching Indonesian in the lower grades (Fitri et al., 2024).

Active and passive sentences are among the learning outcomes at elementary school and can serve as a foundation for exercises that develop students' language skills. In reality, some students do not yet understand what active and passive sentences mean, cannot convert one into the other, and cannot use them to build simple paragraphs. Their difficulties include word choice, word placement, sentence meaning, and spelling. A needs analysis through interviews with the Grade II teachers of SDN Jati 05 Pagi confirmed this picture. The teachers relied on the textbook and storybooks, and students struggled to place the subject, predicate, and object and to change active sentences into passive ones and vice versa. In the Mid-Semester Assessment, only 6 of 29 students (20.7%) answered the active–passive items correctly. The textbook was also perceived as hard to understand, so students could not easily study the material independently, anytime and anywhere.

A pocket book is a small, concise, and portable medium that can be read at any time and place (Sulistyani et al., 2013). Pocket books have been developed for science literacy (Afifah et al., 2020), sports-injury care (Meikahana & Kriswanto, 2015), history (Wibowo & Suryana, 2023), and finding main ideas in Grade V (Febriyanti, 2020). For active and passive sentences in the early grades, other media have been tried, such as hot-air-balloon media for Phase A learners (Lilik et al., 2024). The pocket book in Febriyanti (2020) contained only material and no exercises. The present product therefore adds games, illustrations, and QR codes that open videos and practice questions, and it presents the material as mind maps. A mind map places a central idea in the middle and spreads keywords, colours, images, and curved lines around it, which helps learners see the structure of a topic and remember it (Buzan, 2006; Rahayu, 2021). A mind-map pocket book with QR codes has been reported as very valid for Grade VI ASEAN material (Puspitasari et al., 2022), but its use for sentence structure in Grade II has not been documented in the sources reviewed here.

This study therefore aims (1) to describe the steps of developing a mind map-based pocket book on active and passive sentences for Grade II Indonesian language learning, and (2) to determine the feasibility of the product based on expert validation and student responses.

METHODS

This study used the research and development (R&D) method, which produces a specific product and tests it (Sugiyono, 2017). The development procedure followed the ADDIE model (Branch, 2009), which has five stages: analyze, design, develop, implement, and evaluate (Figure 1). ADDIE has been used recently to design instructional modules and classroom instruction (Li & Zainol Abidin, 2024; Suratnu, 2023). The trial took place at SDN Jati 05 Pagi, Pulogadung District, East Jakarta, from January to June 2025 (even semester of the 2024–2025 academic year).

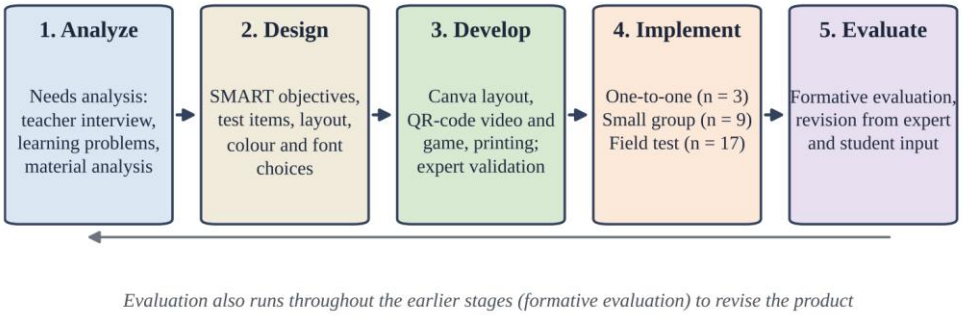


Figure 1. Stages of the ADDIE model as applied in this study

The participants were the Grade II teachers (needs-analysis interviews), 29 Grade II students, and three expert validators: one subject matter expert, one language expert, and one media expert. The students were divided into three non-overlapping groups: three students of varying ability for the one-to-one test, nine students for the small-group test, and the remaining 17 students for the field test.

The instruments were interview guides for the needs analysis and questionnaires for expert validation (20 items for the subject matter expert, 11 for the language expert, and 18 for the media expert) and for student responses (16 items). The questionnaires used a modified four-point Likert scale (Taluke et al., 2019): Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. The scale has no neutral option, so that respondents must state a clear opinion.

The data were analysed descriptively (Hasan, 2004). The percentage score was calculated as total score ÷ (number of items × highest scale point) × 100%. The interpretation interval was obtained by dividing 100% by the four response options: 0–25% = very poor, 26–50% = poor, 51–75% = good, and 76–100% = very good. A score above 50% means the product is feasible and needs no further revision; a score of 50% or below calls for revision.

RESULTS & DISCUSSION

Results

Analyze. The analysis covered a needs assessment, identification of problems, and analysis of the tasks to be learned. Interviews with the Grade II homeroom teacher showed that learning media for Indonesian were limited and that students needed more engaging material. Active and passive sentences were the content students found hardest, because the structures are complex and because students could not remember how to change one form into the other. The mind map technique was therefore chosen to present the material.

Design. The product blueprint began with SMART learning objectives, followed by test items aligned with the competencies to be achieved and the choice of learning strategies. The pocket book has three parts: (1) an introduction (cover, foreword, table of contents, instructions for use, and the learning-objective flow); (2) content (discourse, mind maps, quizzes, games, and QR codes linked to videos

and an online evaluation game); and (3) a closing (summary, bibliography, author profile, and back cover). The pages measure 4.13 × 5.83 in (A6) and are printed on hard paper, with a hard carton cover. Warm, low-intensity colours were chosen, mainly orange and yellow, because colour affects mood and comfort (Alkathiri & Sari, 2019; Mourin et al., 2024), and the Handyman font was selected for its clarity.

Develop. The pages were designed in Canva. The online quizzes and educational videos were then prepared, their links were converted into QR codes, and all pages were compiled into a PDF file and printed as a physical pocket book. Figure 2 shows sample pages of the product.



Figure 2. Sample pages of the pocket book (in Indonesian): cover, instructions, mind map of active sentences, steps for converting sentences, and QR-code video page

The product was then validated by the three experts. As Table 1 shows, the feasibility percentages were 82.5% (subject matter), 95.5% (language), and 93.1% (media), with an average of 90.3% (very good). The subject matter expert recommended correcting several spelling errors, and the revision was made before the trials.

Table 1. Results of the Expert Validation

Validator	Items	Maximum score	Score obtained	Percentage	Category
Subject matter expert	20	80	66	82.5%	Very good
Language expert	11	44	42	95.5%	Very good
Media expert	18	72	67	93.1%	Very good
Overall average				**90.3%**	**Very good**

Implement. The implementation stage tested the validated product with students in three phases. In the one-to-one test, three students of varying ability used the pocket book and completed the 16-item response questionnaire; their individual scores were 64, 56, and 57 out of a maximum of 64, giving 92.2%. In the small-group test, nine students did the same, with individual scores of 54–60 and a result of 89.1%. In the field test, the 17 remaining students used the product in a full class, with individual scores of 54–60 and a result of 87.9%. No respondent in any phase chose Disagree or Strongly Disagree. Table 2 and Figure 3 summarise the results: the overall average of the three trials was 89.7% (very good).

Evaluate. Evaluation was formative and took place at each stage. Its purpose was to gather input for revising the product, and the main input obtained was the spelling correction requested by the subject matter expert.

Table 2. Summary of the Student Trial Results

Trial	Students	Items	Maximum score	Score obtained	Percentage	Category
One-to-one test	3	16	192	177	92.2%	Very good
Small-group test	9	16	576	513	89.1%	Very good
Field test	17	16	1,088	956	87.9%	Very good
Overall average					**89.7%**	**Very good**

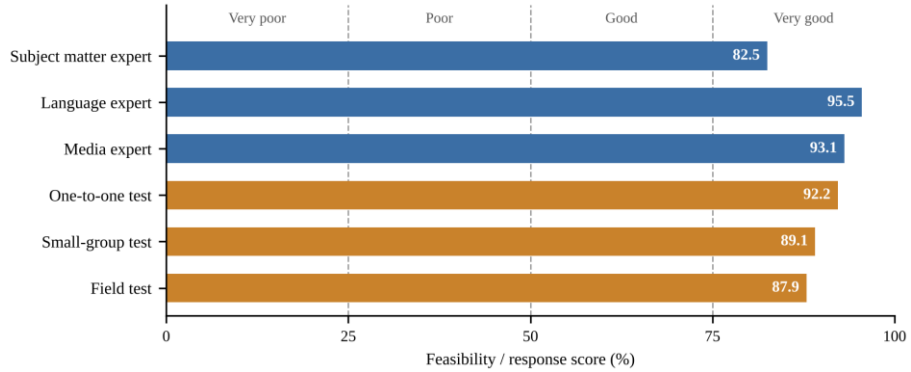


Figure 3. Expert feasibility and student response scores. Dashed lines mark the category boundaries

Discussion

The results show that the mind map-based pocket book is feasible for Grade II Indonesian language learning: all three experts and all three student trials placed it in the "very good" category (average 90.3% and 89.7%). This is in line with the very high validity ratings of a mind-map pocket book with QR codes for Grade VI ASEAN material (Puspitasari et al., 2022) and with the valid pocket-book media for main-idea learning reported by Febriyanti (2020), and it suggests that the pocket book format is well accepted at different grade levels and in different subjects.

Several design features may explain this acceptance, although this study did not test them separately. First, the format is concise and portable, which matches the main advantage of pocket books as learning aids (Sulistyani et al., 2013) and addresses the problem that the textbook was hard to study anywhere and anytime. The pocket book also includes instructions for use and a complete, single-topic content, so students can use it without a teacher at every step. Second, the content follows the principles of mind mapping: a central idea, colours, images, curved branches, and keywords (Buzan, 2006; Rahayu, 2021). For active and passive sentences, such a structure can show the subject–predicate–object pattern and the steps of conversion at a glance, which targets the difficulty identified in the needs analysis. Third, the games, quizzes, and QR-code videos give students practice that the earlier pocket book of Febriyanti (2020) lacked, and they complement the printed pages with media that fit the interests of young learners. Fourth, the warm colours and the clear font were selected with children's comfort in mind (Alkathiri & Sari, 2019; Mourin et al., 2024).

Two patterns in the data deserve attention. The subject matter expert gave the lowest score (82.5%), whereas the language and media experts scored above 93%. Together with the spelling errors this expert found, the pattern suggests that the accuracy and polish of the content, rather than its appearance, needs the most care in the next revision. Student scores also decreased slightly from the one-to-one test (92.2%) to the field test (87.9%). The differences are small and all in the same category, and the groups differed in size and composition, so we do not interpret them as a trend; they could reflect the more varied responses of a full class using the book with less individual support.

Several limitations qualify these conclusions. First, the study established feasibility from expert judgement and student perceptions only. Because no pretest–posttest or control group was used, and the baseline (6 of 29 students correct in the Mid-Semester Assessment) was not measured again after the trials, the study cannot show that the pocket book improves students' mastery of active and passive sentences; the phrase "effective" would be premature. Second, the trial involved one class in one school, and each validator domain was covered by only one expert, so reliability between experts could not be examined. Third, the student responses came from self-reported four-point questionnaires completed by seven- to eight-year-old children, who may tend to agree with statements, and the scale has no neutral option. Future research should test the effect on learning outcomes in a quasi-experimental pretest–posttest control-group design with more classes, add teacher feedback on usability, and re-check the content for accuracy and spelling.

CONCLUSION

This study developed a mind map-based pocket book on active and passive sentences for Grade II Indonesian language learning through the five ADDIE stages. The analysis identified the learning problem and the need for engaging, concise media; the design set the objectives, layout, colours, and A6 format; the development produced the book in Canva, with QR codes linked to videos and an online evaluation game; the implementation tested it with three students, nine students, and a class of 17 students; and the formative evaluation led to a spelling revision.

The pocket book was rated very good by the subject matter expert (82.5%), the language expert (95.5%), and the media expert (93.1%), averaging 90.3%, and by students in the one-to-one test (92.2%), the small-group test (89.1%), and the field test (87.9%), averaging 89.7%. It is therefore feasible for use as supplementary learning media in Grade II Indonesian language lessons. Teachers can use it for independent reading and practice, and further research is recommended to test its effect on students' learning outcomes.

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