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Development of Peer Tutoring-based Worksheet in Elementary School to Enhance Students' Learning Outcomes in Indonesia Language

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ABSTRACT

Many elementary students struggle with understanding and constructing procedural texts, which affects their overall Indonesian language proficiency, as proved by the issue of poor comprehension and practical application of procedural texts among them. The present study aims to produce a valid, practical, and effective peer tutoring-based worksheet in enhancing students' learning outcomes in the Indonesian language, including cognitive and psychomotor aspects. A developmental study using the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model was applied, involving 87 fifth-grade students from three elementary schools in Bandar Lampung, Indonesia. The instruments included a validated test measuring cognitive and psychomotor skills, along with surveys and interviews to assess student and teacher perceptions. Data analysis involved N-gain calculations and paired sample t-tests. Results indicated significant enhancements in both cognitive (N-gain = 0.71, high; t-value = -19.461, statistically significant) and psychomotor aspects (N-gain = 0.60, moderate; t-value = -15.358, statistically significant). Teachers and students expressed high levels of interest and acceptance of the worksheet-based peer tutoring method. It means that integrating peer tutoring-based worksheets into the curriculum fosters interactive and student-centered learning, enhancing students' learning outcomes in the Indonesian

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ARTICLE INFO

Received: 9 July 2025 | Revised: 11 August 2025 | Accepted: 2 September 2025 | Published Online: 22 October 2025
DOI: <https://doi.org/10.30564/fls.v7i11.10979>

CITATION

Nurwahidin, M., Herpratiwi, Izzatika, A., et al., 2025. Development of Peer Tutoring-based Worksheet in Elementary School to Enhance Students' Learning Outcomes in Indonesia Language. *Forum for Linguistic Studies*. 7(11): 833–850. DOI: <https://doi.org/10.30564/fls.v7i11.10979>

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language, including cognitive and psychomotor aspects. Consequently, structured peer tutoring can serve as an effective instructional strategy, promoting deeper understanding and practical Indonesian language application.

Keywords: Elementary School; Indonesia Language; Learning Outcomes; Peer Tutoring; Worksheet

1. Introduction

The ability to achieve high learning outcomes in the Indonesian language plays a crucial role in shaping students' future academic success. As the national language, Indonesian serves as the primary medium of instruction across various subjects, making proficiency in it essential for students to comprehend and excel in their studies^[1]. Strong language skills facilitate critical thinking, problem-solving, and effective communication, which are indispensable in both academic and professional settings^[2,3]. When students achieve high proficiency in the Indonesian language, they are better equipped to grasp complex concepts across disciplines, enhancing their overall academic performance. Furthermore, mastering the Indonesian language skills early in elementary school establishes a strong foundation for more advanced literacy and cognitive development^[4]. It enables students to read with comprehension, write coherently, and articulate their ideas persuasively. Without a solid grasp of the language, students may struggle to understand textbooks, follow instructions, and participate in discussions^[5]. Therefore, ensuring high learning outcomes in the Indonesian language is paramount for fostering students' intellectual growth and academic excellence in the long run.

Despite its significance, many elementary school students in Indonesia exhibit poor learning outcomes in the Indonesian language^[6]. This issue has been widely observed in various educational assessments, where students struggle with reading comprehension, writing coherence, and grammatical accuracy^[7]. Several factors contribute to this problem, including ineffective teaching strategies, a lack of engaging learning materials, and students' low motivation to learn^[8]. Additionally, large classroom sizes often limit teachers' ability to provide individualized attention, making it difficult for struggling students to keep up with the curriculum. Socioeconomic factors also play a role, as students from disadvantaged backgrounds may have limited access to books and educational resources at home^[5]. Another critical issue is the reliance on rote memorization rather than

meaningful learning experiences that foster a deeper understanding of the language. The absence of interactive and student-centered learning approaches further exacerbates the problem, making it challenging for students to develop essential language skills^[9]. As a result, there is an urgent need to implement effective instructional strategies that can enhance students' learning outcomes in the Indonesian language.

One promising approach to addressing this issue is peer tutoring, which has been widely recognized as an effective method for improving students' learning outcomes. Peer tutoring involves students working together in pairs or small groups, with one student acting as the tutor and the other as the tutee^[10]. This approach fosters a collaborative learning environment where students actively engage in discussions, reinforce their understanding of the material, and develop critical thinking skills. The interactive nature of peer tutoring allows students to receive immediate feedback, clarify misconceptions, and enhance their confidence in using the Indonesian language^[11]. Furthermore, peer tutoring has been shown to increase students' motivation and engagement by making learning more relatable and enjoyable. Since students often feel more comfortable interacting with their peers than with teachers, they are more likely to ask questions and participate in discussions^[12]. In the context of the Indonesian language learning, peer tutoring can help students improve their reading fluency, comprehension, and writing abilities^[13]. By encouraging cooperative learning, this method not only enhances language proficiency but also promotes social skills and a positive attitude toward learning.

To further enhance the effectiveness of peer tutoring, the use of worksheets as an instructional tool is highly recommended. Worksheets provide structured learning activities that guide students through key concepts, exercises, and problem-solving tasks. In the context of peer tutoring, worksheets can serve as a valuable resource for both tutors and tutees by offering clear instructions, practice questions, and reinforcement activities^[14]. The use of well-designed worksheets ensures that learning remains focused, systematic, and aligned with the curriculum. Additionally, worksheets

can be tailored to accommodate different learning styles and abilities, allowing students to progress at their own pace^[15]. By incorporating interactive exercises, comprehension questions, and writing tasks, worksheets make the learning process more engaging and meaningful. In elementary school settings, where students may have varying levels of proficiency in the Indonesian language, worksheets provide a structured framework that facilitates peer interaction and cooperative learning^[16]. When integrated with peer tutoring, worksheets can significantly improve students' understanding and retention of linguistic concepts, ultimately leading to better learning outcomes in the Indonesian language^[17,18].

Several empirical studies have explored and examined the role of worksheets in enhancing students' learning outcomes in the Indonesian language^[19–23]. Research has demonstrated that worksheet-assisted learning environments can improve reading comprehension, writing skills, and overall language proficiency^[19,24]. Many experts support the use of structured learning materials to reinforce students' understanding and retention of key concepts^[20,22]. However, while numerous studies have focused on worksheet-assisted learning, very few have investigated the combined effect of peer tutoring and worksheets in the Indonesian language learning. The integration of peer tutoring with worksheets presents a novel approach that has yet to be extensively explored in educational research. This study bridges this gap by examining how peer tutoring, when supplemented with structured worksheets, can enhance students' learning outcomes in the Indonesian language. The novelty of this study lies in its focus on the synergistic effect of peer tutoring and worksheet-based learning, offering a new perspective on how to optimize language instruction in elementary schools.

The present study aims to produce a valid, practical, and effective peer tutoring-based worksheet in enhancing students' learning outcomes in the Indonesian language. By integrating peer tutoring with structured worksheets, this study seeks to develop an innovative instructional approach that enhances students' Indonesian language proficiency and academic performance. The findings of this study are expected to provide valuable insights into effective teaching strategies that can be implemented in elementary schools. Additionally, the significant contribution of this study lies in its potential to address the persistent issue of poor learning outcomes in the Indonesian language, thereby enhancing

students' overall academic success. Ultimately, this study supports the development of effective pedagogical practices that enhance students' mastery of the Indonesian language and promote lifelong learning. The following research questions are used to specify the purpose of the present study, such as (1) How does the needs analysis go into developing peer tutoring-based worksheet? (2) What is the process for designing peer tutoring-based worksheet? (3) How is the validity of peer tutoring-based worksheet? (4) How is the practicality of peer tutoring-based worksheet to be implemented in the learning environment of the Indonesian language? (5) How much does the enhancement of students' learning outcomes in the Indonesian language using peer tutoring-based worksheet? (6) What does peer tutoring-based worksheet significantly enhance in students' learning outcomes in the Indonesian language?

2. Literature Review

2.1. Learning Outcomes in the Indonesian Language

Learning outcomes in language subjects, particularly in Indonesian, refer to students' ability to acquire, comprehend, and apply linguistic knowledge effectively^[25]. According to Solnyshkina et al.^[26], learning outcomes encompass both cognitive and psychomotor aspects. The cognitive aspect involves students' ability to understand, analyze, and produce language through reading, writing, speaking, and listening^[27]. Moreover, Ardasheva et al.^[28] categorized cognitive learning outcomes into knowledge, comprehension, application, analysis, synthesis, and evaluation. On the other hand, the psychomotor aspect relates to the practical application of language skills, including pronunciation, fluency, and written expression^[29]. According to Batten^[30], psychomotor skills in language learning involve coordination between mental processes and physical articulation. In the Indonesian language learning, the integration of these aspects ensures that students develop both intellectual understanding and practical communication abilities. Waluyo^[31] emphasizes that effective language education should balance cognitive knowledge with psychomotor execution to foster comprehensive linguistic proficiency. Therefore, learning outcomes in the Indonesian language learning should focus on both conceptual mastery and real-world language application.

To measure students' learning outcomes in the Indonesian language, specific indicators must be considered, encompassing both cognitive and psychomotor aspects. Cognitive indicators include students' ability to comprehend texts, construct coherent sentences, and analyze linguistic structures^[32]. Bloom's taxonomy suggests that students should progress from remembering language concepts to evaluating and creating complex linguistic expressions. Psychomotor indicators, as proposed by Sastromiharjo et al.^[33], involve oral fluency, articulation accuracy, and handwriting legibility in written assignments. In the Indonesian language learning, Brooks et al.^[34] propose that cognitive mastery should be assessed through comprehension tests, essay writing, and oral presentations. Psychomotor skills, on the other hand, can be measured by evaluating pronunciation, fluency, and writing coherence in practical exercises. Additionally, observation-based assessment methods can provide insights into students' real-time application of language skills. Performance tasks, such as storytelling, debates, and script reading further enhance the assessment of psychomotor outcomes. A combination of written tests, oral examinations, and interactive assessments ensures a comprehensive evaluation of students' learning outcomes^[35]. Therefore, a multidimensional assessment approach is essential to accurately gauge students' proficiency in the Indonesian language learning.

2.2. Peer Tutoring

Peer tutoring is an instructional strategy where students support each other's learning through structured interactions, as defined by Galbraith et al.^[10]. In the context of language learning, peer tutoring involves one student acting as a tutor while another serves as a tutee, facilitating reciprocal knowledge exchange^[36]. According to Leung^[37], peer tutoring is characterized by active student engagement, collaboration, and knowledge reinforcement through discussion. In the Indonesian language learning, peer tutoring fosters a supportive learning environment where students refine their reading, writing, and speaking skills^[38]. One of its strengths is the ability to personalize learning experiences, making complex linguistic concepts more comprehensible. Furthermore, peer tutoring promotes confidence and reduces language anxiety, as students often feel more comfortable communicating with their peers than with instructors^[39]. Research suggests that peer tutoring enhances students' motivation and engagement,

leading to improved language retention. Additionally, peer tutoring aligns with social constructivist theories, which emphasize learning through social interaction. By providing immediate feedback and encouragement, peer tutoring helps students develop greater proficiency in the Indonesian language skills^[40,41]. Thus, peer tutoring serves as a dynamic approach to enhancing students' learning outcomes in the Indonesian language.

The implementation of peer tutoring in the Indonesian language learning involves several key phases, as outlined by Topping^[42]. The first phase is planning, where teachers select student pairs or groups based on proficiency levels and establish clear learning objectives. Next is the orientation phase, where tutors receive training on effective teaching strategies, including questioning techniques and corrective feedback. The third phase is structured interaction, where tutor-tutee pairs engage in collaborative learning activities such as reading exercises, grammar drills, and writing tasks. During the practice phase, students reinforce their understanding through repeated exercises, discussions, and role-playing scenarios. The fifth phase is monitoring, where teachers observe sessions, provide guidance, and ensure that learning objectives are met. The evaluation phase follows, in which teachers assess students' progress through quizzes, oral assessments, and peer evaluations. Additionally, a reflection phase allows students to share feedback and discuss their learning experiences. Successful peer tutoring programs integrate structured activities that encourage both cognitive and psychomotor skill development^[43]. By following these phases systematically, peer tutoring can significantly enhance students' mastery of the Indonesian language. Thus, a well-organized implementation process ensures the effectiveness of peer tutoring in language learning.

2.3. Worksheet

A worksheet is a structured learning tool designed to facilitate student engagement and comprehension, as defined by Ransom and Manning^[13]. Worksheets in language learning contain exercises, guided questions, and practical tasks that reinforce linguistic concepts. According to Inan and Erkus^[43], effective worksheets are interactive, visually appealing, and aligned with learning objectives. In the Indonesian language education, worksheets help students practice reading, writing, and grammar skills systematically^[44]. One

key characteristic of worksheets is their adaptability to different proficiency levels, making them suitable for diverse classrooms. Another strength of worksheets is their ability to provide immediate reinforcement, allowing students to apply theoretical knowledge to practical exercises^[45]. Researches indicate that using worksheets improves students' retention and comprehension by promoting active engagement with language content. Furthermore, worksheets serve as a self-paced learning resource, enabling students to revisit concepts independently. The structured format of worksheets ensures that students develop both cognitive understanding and psychomotor proficiency^[46–49]. Thus, worksheets play a crucial role in enhancing students' learning outcomes in the Indonesian language education.

Worksheets function as an effective assistant tool in peer tutoring to enhance students' learning outcomes in the Indonesian language. According to Vygotsky's social learning theory in Akers and Jennings^[50], learning is most effective when it occurs within a structured, interactive environment. Worksheets in peer tutoring provide a scaffolded framework that guides student interactions and ensures productive learning experiences^[51]. Research suggests that using worksheets in peer tutoring sessions enhances organization and consistency in instruction. By incorporating targeted exercises, worksheets help tutors explain concepts more clearly and facilitate step-by-step learning. Additionally, worksheets allow students to track their progress and reinforce their understanding through structured activities^[52,53]. Research has demonstrated that integrating worksheets with peer tutoring increases students' engagement and knowledge retention. The combination of peer collaboration and guided exercises creates a balanced approach to language learning. Moreover, worksheets in peer tutoring settings promote independent learning by providing reference materials for further practice^[54]. Thus, worksheet-assisted peer tutoring offers a comprehensive strategy for improving students' learning outcomes in the Indonesian language.

This study advances applied linguistics by showing how peer tutoring-based worksheets do more than enhance classroom performance; they operationalize key principles of language acquisition theory in measurable ways. The consistently high cognitive gains confirm Krashen's claim that comprehensible input thrives in low-anxiety environments, while also demonstrating that such input can be systemati-

cally structured through peer-mediated tasks. By situating these findings within Vygotsky's ZPD, the study illustrates how collaborative scaffolding translates directly into second-language development, thereby extending sociocultural theory with empirical classroom evidence. The psychomotor results further enrich Hymes' model of communicative competence by showing that structured peer tutoring supports the practical application of language skills, not just abstract understanding. What distinguishes this study is its integration of quantitative gains with theoretical constructs, moving beyond educational effectiveness to illuminate mechanisms of language acquisition. This synthesis offers applied linguistics new evidence on how peer interaction simultaneously develops grammatical knowledge, strategic competence, and interactional fluency. Unlike many classroom-focused studies, the findings explicitly connect pedagogy with theory, thus narrowing the gap between practical teaching outcomes and linguistic frameworks. Moreover, because peer tutoring and structured worksheets are not language-specific, the approach has clear cross-linguistic applicability, offering a model that can be adapted to other language learning contexts beyond Indonesian. This suggests a broader contribution to the field by identifying peer tutoring as a replicable method for fostering communicative competence across diverse linguistic settings. Ultimately, the study reframes a pedagogical intervention as a theoretical contribution, extending applied linguistics knowledge on how collaborative structures mediate language learning.

3. Materials and Methods

3.1. Research Design and Participant

This research followed a Research and Development approach utilizing the ADDIE model to create a peer tutoring-based worksheet that met criteria for validity, practicality, and effectiveness in enhancing students' learning outcomes in the Indonesian language. According to Branch^[55], ADDIE stands for Analyze, Design, Develop, Implement, and Evaluate, serving not only as a model but also as a framework for product development. The selection of this model in the study aimed to develop a peer tutoring-based worksheet. In the analysis phase, several key activities were undertaken, such as identifying students' and teachers' needs, and reviewing related literature. The design phase created peer

tutoring-based worksheet, containing procedural text in the Indonesian language. During the development phase, the prototype of peer tutoring-based worksheet was validated by experts in learning media and the Indonesian language. Its practicality was also assessed through trials with users, including students and teachers. In the implementation phase, the validated peer tutoring-based worksheet was tested in a learning environment of the Indonesian language. Finally, the evaluation phase involved an analysis of the effective-

ness of peer tutoring-based worksheet in enhancing students' learning outcomes in the Indonesian language.

Pre-experimental design was employed in the implementation and evaluation phases to examine the effect of peer tutoring-based worksheet on enhancing students' learning outcomes in the Indonesian language. The study utilized a pretest-post-test group design to measure the enhancement of students' learning outcomes in the Indonesian language (see **Table 1**).

Table 1. Pre-experimental design.

Group	Pretest	Intervention	Post-test
Experiment	Students' Learning Outcomes in Indonesian Language	Peer Tutoring-based Worksheet	Students' Learning Outcomes in Indonesian Language

This study engaged two experts, including one specializing in worksheet design, and another in worksheet content. Additionally, a limited trial was conducted with 54 fifth-grade students from three public elementary schools in Bandar Lampung, Indonesia to assess the practicality of peer tutoring-based worksheet in the learning environment of the Indonesian language. Furthermore, 87 fifth-grade students from the same school participated in a pre-experimental phase. Participants for both the limited trial and pre-experimental study were selected through purposive sampling, ensuring accessibility to the targeted classes^[56,57].

3.2. Instrument and Data Collection

In this study, a test was utilized as the primary instrument to measure students' learning outcomes in the Indonesian language, specifically focusing on procedural text comprehension and application. The test was designed to assess both cognitive and psychomotor aspects, ensuring a comprehensive evaluation of students' proficiency. The cognitive aspect consisted of 20 multiple-choice questions, each with five options, aimed at measuring students' understanding of procedural text structures, functions, and language features. These multiple-choice questions were structured to evaluate various cognitive levels, including knowledge, comprehension, application, analysis, and synthesis. Meanwhile, the psychomotor aspect included one essay question that required students to demonstrate their ability to construct a well-organized procedural text. This question was designed to assess students' writing skills, coherence, and ability to

apply language rules in a practical context. To ensure the validity of the test, expert judgment and empirical testing were conducted, yielding validity coefficients ranging from $r = 0.881$ to $r = 0.923$. Moreover, the test reliability was confirmed using the Cronbach alpha method, resulting in a high reliability coefficient of 0.941. Such high validity and reliability indicated that the test was both consistent and accurate in measuring students' learning outcomes^[58]. The instrument was pilot-tested with a sample of students to refine question clarity and appropriateness.

3.3. Procedure

The development process of peer tutoring-based worksheet aimed at enhancing students' learning outcomes in the Indonesian language is summarized in **Figure 1**. This procedure outlines the key stages, including validation, limited trials, pre-experimentation, and the revision process to refine the game for effective implementation.

3.4. Data Analysis

Descriptive statistics, such as average scores, were utilized to analyze the quantitative data from the validation and limited trial processes. The average validity scores were compared against the validity criteria outlined by Qohar et al.^[59], defined as follows: $1 \leq Vr < 2$ (Invalid), $2 \leq Vr < 3$ (Less Valid), $3 \leq Vr < 4$ (Valid), and $4 \leq Vr \leq 5$ (Very Valid). Additionally, qualitative feedback from the validation sheet, including comments and suggestions, was used to refine the

prototype of peer tutoring-based worksheet. For the limited trial, the practicality scores were similarly compared against practicality criteria of Qohar et al.^[59], including: $1 \leq Pr < 2$ (Impractical), $2 \leq Pr < 3$ (Less Practical), $3 \leq Pr < 4$ (Practical), and $4 \leq Pr \leq 5$ (Very Practical). Suggestions

and comments regarding practicality from the trial process were also used to enhance students' learning outcomes in the Indonesian language. A thematic analysis of the game's weaknesses and errors during validation and trials informed revisions to improve the product.

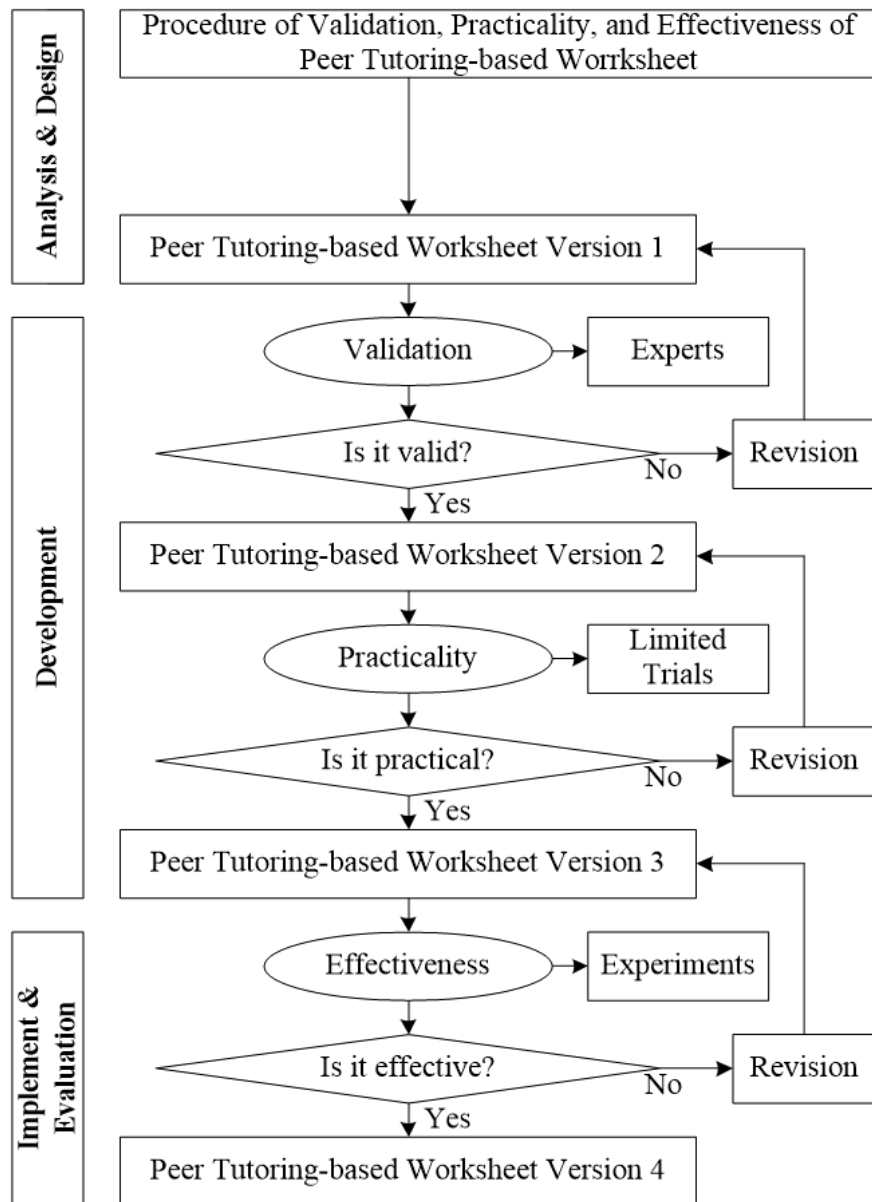


Figure 1. The procedure of validation, limited trial, pre-experiment, and revision process.

To assess the enhancement of students' learning outcomes in the Indonesian language, the N-gain value was used, categorized as: $Ng < 0.30$ (low), $0.30 \leq Ng < 0.70$ (moderate), and $Ng \geq 0.70$ (high)^[57]. Additionally, inferential statistics, such as paired t-tests, were used to examine the effect of peer tutoring-based worksheet in enhancing stu-

dents' learning outcomes in the Indonesian language. The paired sample t-test was applied to examine the enhancement of students' learning outcomes in Indonesian language in the learning environment using peer tutoring-based worksheet. All statistical calculations were conducted using software tools, such as SPSS version 26.

4. Results

4.1. Need Analysis and Designing Process of Peer Tutoring-based Worksheet

The curriculum analysis was conducted by investigating the basic competence and learning achievement of the Indonesian language in the fifth-grade classroom. The results of this analysis revealed that procedural text is a primary topic required for fifth-grade students in the Indonesian language curriculum. Procedural text is crucial for students as it helps them understand structured instructions, sequences, and logical steps in communication. Mastering procedural text enhances students' ability to write and comprehend step-by-step explanations in various contexts^[60]. In the Indonesian language, procedural text is defined as written or spoken instructions that guide readers or listeners to complete a task systematically^[61]. The main advantages of procedural text include improving students' ability to follow instructions, enhancing their writing coherence, and fostering logical thinking. Additionally, procedural text strengthens students' vocabulary and grammatical structures by encouraging clarity and conciseness. Understanding procedural text also supports students in developing effective communication skills in both academic and daily life contexts^[62]. The integration of procedural text in the curriculum ensures that students gain practical skills applicable to multiple disciplines. Therefore, teaching procedural text is essential for building students' linguistic competence and functional literacy.

The results of observation and interviews indicated that most in-service elementary teachers had not utilized peer tutoring-based worksheets, instead relying on packaged books as their primary teaching resource. The findings showed that teachers preferred packaged books due to their structured con-

tent and familiarity, despite the potential benefits of more interactive learning methods. However, survey results from 100 fifth-grade students revealed that 82.5% of them expressed interest in using peer tutoring-based worksheets for learning the Indonesian language. These students believed that peer tutoring-based worksheets would make learning more engaging and collaborative. Furthermore, 17.5% of students stated that they were interested in using peer tutoring-based worksheets to make the Indonesian language learning environment less monotonous. The students highlighted that peer tutoring provided opportunities for active participation and better comprehension of procedural texts. Many students expressed that working with peers helped them clarify doubts and reinforce learning more effectively than traditional textbook-based instruction. The data suggested that implementing peer tutoring-based worksheets could significantly enhance students' motivation and interest in learning the Indonesian language. Consequently, adopting peer tutoring-based worksheets in the classroom could foster a more dynamic and interactive learning environment for students. The design of peer tutoring-based worksheet consists of ten pages (see **Figure 2**).

4.2. Validity and Practicality of Peer Tutoring-based Worksheet

The process of validation involved two experts in design aspect and content aspect. The aspect of design consisted of content quality, illustration quality, and learning strategy while the aspect of content consisted of content relevance, suitability between content and learning goal, suitability between content and students' cognitive development, and eligibility of content presentation. The results of validation process conducted by the experts on the aspect of design and content are shown in **Table 2**.

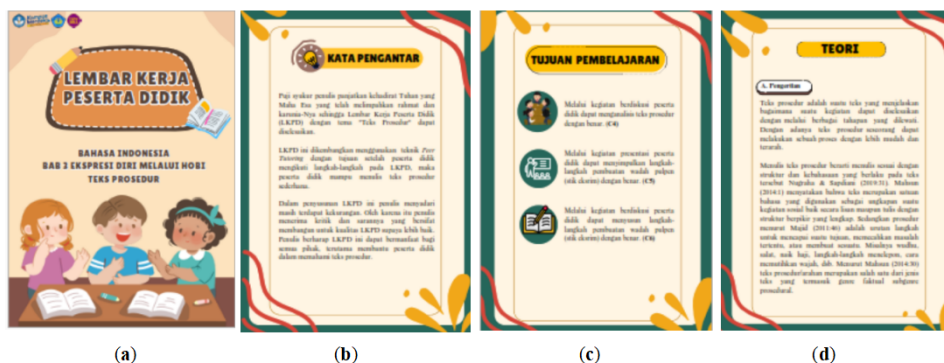


Figure 2. Cont.

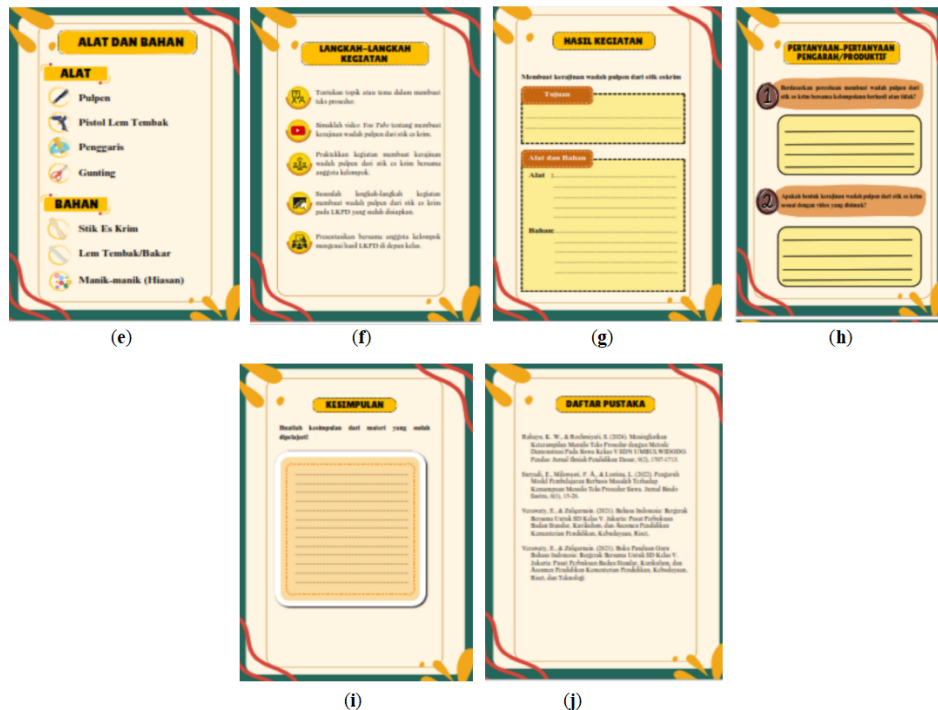


Figure 2. The design of peer tutoring-based worksheet. (a) worksheet title and cover; (b) preface; (c) learning goals; (d) theory; (e) tools and materials; (f) activity steps; (g) activity results; (h) guiding questions; (i) conclusion, and (j) references.

Table 2. Experts' response on the prototype of peer tutoring-based worksheet.

No	Criteria of Design Aspect	Vr	Category
1	Content quality of peer tutoring-based worksheet	3.71	Valid
2	Illustration quality	3.85	Valid
3	Effect of peer tutoring-based worksheet on learning strategy	3.64	Valid
Validation results: Eligible to be implemented with doing revision Suggestion: Revise the guiding questions			
No	Criteria of Content Aspect	Vr	Category
1	Content relevance	3.91	Valid
2	Suitability between content and learning goals	3.24	Valid
3	Suitability between content and students' cognitive development	3.57	Valid
4	Eligibility of content presentation	3.68	Valid
Validation results: Eligible to be implemented with revision Suggestion: Revise the use of conjunction and Bloom's taxonomy of cognitive level, and adjust task indicators to learning achievements			

The results presented in **Table 2** indicate that the peer tutoring-based worksheet prototype has been validated and deemed eligible for implementation with minor revisions. The design aspect received high validation scores, with content quality at 84.50%, illustration quality at 86.30%, and the effect on learning strategy at 83.00%, all categorized as valid. These findings suggest that the worksheet is well-structured, visually supportive, and positively contributes to students' learning strategies. Similarly, the content aspect was also validated with high percentages, including content relevance (84.00%), suitability between content and learning goals (86.00%), suitability with students' cognitive

development (84.00%), and eligibility of content presentation (82.00%). While the results confirm the worksheet's overall effectiveness, experts suggested certain revisions, particularly refining the guiding questions and improving the use of conjunctions. Additionally, alignment with Bloom's taxonomy and task indicators with learning achievements should be adjusted for better cognitive engagement. These recommendations highlight the importance of enhancing clarity and instructional alignment to optimize student learning outcomes. With these revisions, the peer tutoring-based worksheet is expected to be more effective in facilitating collaborative learning in the Indonesian language curricu-

lum. The practicality of peer tutoring-based worksheet to be implemented in the learning environment of Indonesian language involved an in-service elementary teacher, and 54

students from three schools in limited trial. Teachers' response to the prototype of peer tutoring-based worksheet is shown in **Table 3**.

Table 3. Teachers' response on the prototype of peer tutoring-based worksheet.

No	Evaluation Criteria	Percentage	Category
1	Eligibility of presentation	92.00%	Eligible
2	Eligibility of content	89.00%	Eligible
3	Eligibility of language	80.00%	Eligible

The interpretation of **Table 3** indicates that teachers responded positively to the prototype of the peer tutoring-based worksheet across various evaluation criteria. The eligibility of presentation received a high approval rating of 92.00%, suggesting that the worksheet's structure and layout were clear and visually appealing for instructional use. Similarly, the eligibility of content was rated at 89.00%, demonstrating that teachers found the material relevant, comprehensive, and aligned with curriculum standards. The eligibility of language, while slightly lower at 80.00%, was still catego-

rized as eligible, indicating that the worksheet's language was appropriate for students but could benefit from minor refinements. These results suggest that the prototype is well-designed and has the potential to enhance students' learning experiences in the Indonesian language classes. Therefore, implementing the peer tutoring-based worksheet could significantly improve both instructional quality and student engagement. Students' response who come from three different elementary schools regarding the prototype of peer tutoring-based worksheet is shown in **Table 4**.

Table 4. Students' response on the prototype of peer tutoring-based worksheet.

No	Evaluation Criteria	School 1		School 2		School 3	
		%	Category	%	Category	%	Category
1	Content of peer tutoring-based worksheet	3.41	Practical	3.82	Practical	3.97	Practical
2	Presentation of peer tutoring-based worksheet	3.75	Practical	3.54	Practical	3.64	Practical
3	Language of peer tutoring-based worksheet	3.34	Practical	3.61	Practical	3.87	Practical

The interpretation of **Table 4** reveals that students from all three schools responded positively to the prototype of the peer tutoring-based worksheet. The content of the worksheet received high practicality ratings across School 1 (82.21%), School 2 (84.31%), and School 3 (85.61%), indicating that students found the material useful and applicable to their learning. Similarly, the presentation of the worksheet was rated practical by students from School 1 (83.61%), School 2 (85.71%), and School 3 (84.31%), suggesting that its structure and layout were engaging and easy to follow. The language used in the worksheet was also considered practical, with School 1 rating it at 82.74%, School 2 at 83.25%, and School 3 at 85.84%, showing that students found the language clear and comprehensible. These consistent results across different schools confirm that the worksheet effectively supports students' learning in the Indonesian language lessons. The high practicality ratings across all evaluation criteria demonstrate that the worksheet is both student-friendly

and pedagogically beneficial. Given these findings, integrating the peer tutoring-based worksheet into the curriculum could enhance students' engagement and comprehension. Therefore, the worksheet holds significant potential to improve learning outcomes in the Indonesian language education.

4.3. The Effectiveness of Peer Tutoring-based Worksheet in Enhancing Students' Learning Outcomes in Indonesia Language

The value of N-gain was used to describe the enhancement of students' learning outcomes in Indonesian language using the peer tutoring-based worksheet (See **Table 5**).

The interpretation of **Table 5** demonstrates a significant enhancement in students' learning outcomes in the Indonesian language across both cognitive and psychomotor aspects. The cognitive aspect showed a consistently high N-gain score across all schools, with School 1 and School

3 scoring 0.72 and School 2 scoring 0.71, categorizing all as high. This indicates that students experienced substantial enhancement in their understanding and application of procedural texts after utilizing the peer tutoring-based worksheet. In the psychomotor aspect, the results varied slightly, with School 2 achieving a high N-Gain of 0.72, while School 1 and School 3 recorded moderate N-Gain scores of 0.55. The overall N-Gain for the cognitive aspect was 0.71 (high), while for the psychomotor aspect, it was 0.60 (moderate), reflecting a more significant enhancement in cognitive skills compared to psychomotor abilities. These findings suggest

that the peer tutoring-based worksheet was particularly effective in strengthening students' conceptual understanding and analytical skills. However, while the psychomotor aspect also showed enhancement, there remains room for further enhancement in practical applications of language learning. Therefore, future instructional strategies could focus on refining the psychomotor dimension to ensure balanced progress in both cognitive and practical language skills.

Subsequently, paired sample t-test was used to examine the enhancement of students' learning outcomes in the Indonesian language (See **Table 6**).

Table 5. The enhancement of students' learning outcomes in the Indonesian language.

Students	Cognitive Aspect		Psychomotor Aspect	
	N-gain	Category	N-gain	Category
School 1	0.72	High	0.55	Moderate
School 2	0.71	High	0.72	High
School 3	0.72	High	0.55	Moderate
Overall	0.71	High	0.60	Moderate

Table 6. The results of paired sample t-test.

Students	Pair	Degree of Freedom	T-value
School 1	Cognitive Pre-Test - Cognitive Post-Test	28	-16.782*
	Psychomotor Pre-Test - Psychomotor Post-Test	28	-11.544*
School 2	Cognitive Pre-Test - Cognitive Post-Test	28	-17.194*
	Psychomotor Pre-Test - Psychomotor Post-Test	28	-18.687*
School 3	Cognitive Pre-Test - Cognitive Post-Test	28	-16.782*
	Psychomotor Pre-Test - Psychomotor Post-Test	28	-11.544*
Overall	Cognitive Pre-Test - Cognitive Post-Test	28	-19.461*
	Psychomotor Pre-Test - Psychomotor Post-Test	28	-15.358*

*: $p < 0.05$

The interpretation of **Table 6** indicates that there was a statistically significant enhancement in students' learning outcomes in both cognitive and psychomotor aspects, as evidenced by the paired sample t-test results. The negative T-values across all schools suggest that students' post-test scores were significantly higher than their pre-test scores, confirming the effectiveness of the peer tutoring-based worksheet. In the cognitive aspect, the T-values for School 1 (-16.782), School 2 (-17.194), and School 3 (-16.782) demonstrate a substantial enhancement in students' understanding of procedural texts. Similarly, the overall cognitive T-value (-19.461) further supports the significant enhancement in cognitive learning outcomes. The psychomotor aspect also showed notable enhancement, with School 1 and School 3 recording T-values of -11.544, while School 2 had a higher T-value of -18.687, indicating a stronger enhancement in practical language skills. The

overall psychomotor T-value (-15.358) reinforces the positive effect of the intervention on students' ability to apply language skills in practice. These findings confirm that the peer tutoring-based worksheet was an effective instructional tool, leading to significant learning gains in both cognitive and psychomotor aspects. Consequently, the results highlight the importance of integrating peer tutoring and structured worksheets to enhance students' proficiency in the Indonesian language.

5. Discussion

5.1. Peer Tutoring-based Worksheet as An Assistant Tool to Enhance Students' Learning Outcomes in Indonesian Language

The findings of this study align with previous research that highlights the effectiveness of peer tutoring-based work-

sheets in enhancing students' learning outcomes. Several studies have demonstrated that peer-assisted learning strategies significantly improve both cognitive and psychomotor skills in language learning^[18,23]. The present study confirms that peer tutoring-based worksheets lead to a notable increase in students' cognitive and psychomotor abilities in the Indonesian language. This is supported by research conducted by Topping^[42], which found that peer tutoring fosters deeper understanding and retention of knowledge through collaborative learning. Similarly, Leung^[36] indicated that structured peer tutoring improves language comprehension and critical thinking skills among students. Furthermore, studies by Evans and Moore^[37], and Comfort and McMahon^[35], emphasize the importance of social interaction in cognitive development, which is evident in the effectiveness of peer tutoring-based worksheets. The findings of present study reinforce these theories, showing that peer collaboration and guided worksheets provide structured and interactive learning experiences. The significant enhancement in both cognitive and psychomotor aspects suggests that peer tutoring-based worksheets are an effective instructional tool for Indonesian language learning. These results emphasize the necessity of integrating peer-assisted learning strategies into the curriculum to maximize student achievement. Therefore, the current findings contribute to the growing body of evidence supporting the use of peer tutoring-based worksheets in language education.

The significant enhancement in the cognitive aspect of students' learning outcomes can be attributed to the structured and interactive nature of peer tutoring-based worksheets. Cognitive learning involves comprehension, application, analysis, and evaluation, which are effectively developed through peer collaboration. According to Leung and Scarino^[28], cognitive learning progresses through hierarchical stages, and peer tutoring facilitates this progression by promoting active engagement and discussion. The worksheet serves as a structured guide, helping students process and retain information more effectively^[49]. Moreover, the social constructivist theory proposed by Shay^[63] suggests that students learn better when they engage in dialogue with more knowledgeable peers. The interactive exercises included in the worksheet encourage students to clarify concepts, ask questions, and reinforce their understanding. Additionally, peer tutoring fosters a sense of responsibility and motiva-

tion, as students take on the role of both learner and teacher. The results of this study align with previous findings by Topping^[41], who demonstrated that peer tutoring enhances students' ability to critically analyze and apply knowledge. Furthermore, the collaborative nature of peer tutoring minimizes cognitive overload by breaking down complex topics into manageable sections^[39]. Thus, peer tutoring-based worksheets provide a structured yet flexible approach that significantly enhances students' cognitive learning outcomes in the Indonesian language.

The enhancement in students' psychomotor learning outcomes through peer tutoring-based worksheets can be attributed to the active and practical engagement facilitated by this method. Psychomotor skills involve the ability to apply learned knowledge through physical actions, such as writing, speaking, and performing language tasks. According to Harrow's Psychomotor Domain, learning at this level requires practice, repetition, and hands-on activities, all of which are incorporated into peer tutoring-based worksheets^[64]. The structured exercises in the worksheet allow students to develop their writing fluency and speaking confidence in a collaborative setting. Furthermore, peer tutoring provides immediate feedback and correction, enabling students to refine their pronunciation, intonation, and grammatical accuracy. The interactive nature of peer tutoring also encourages students to participate in role-playing and discussion activities, which enhance their verbal communication skills. Research by Topping^[42] found that hands-on learning experiences significantly improve psychomotor skills, supporting the findings of the present study. Additionally, the guided approach of peer tutoring-based worksheets helps students gradually build proficiency through repeated practice. By engaging in peer interactions, students develop confidence in expressing their ideas and applying language skills in real-life contexts^[36]. Therefore, the implementation of peer tutoring-based worksheets effectively enhances students' psychomotor skills, making language learning more dynamic and impactful.

5.2. Implications for Educational Settings of the Indonesian Language

The theoretical implications of the present study highlight the significance of peer tutoring-based worksheets in enhancing students' cognitive and psychomotor learning

outcomes in the Indonesian language. These findings reinforce social constructivist theory, which emphasizes the role of social interaction in learning development. The results further support Bloom's Taxonomy, particularly in the cognitive domain, as peer tutoring enables students to progress from basic knowledge acquisition to higher-order thinking skills. Additionally, the study aligns with Harrow's Psychomotor Domain, demonstrating that hands-on activities and structured peer interaction can effectively develop students' practical language skills. This research contributes to the growing body of literature on cooperative learning by providing empirical evidence on the efficacy of peer tutoring strategies. It also validates the use of structured worksheets as an instructional tool that enhances engagement, retention, and comprehension. The findings suggest that learning is more effective when students actively participate in knowledge construction rather than passively receiving information. Moreover, the study provides a framework for integrating peer tutoring and worksheets into language education to foster holistic development. Future research can build upon these findings to explore variations of peer tutoring methods and their effectiveness across different subjects. Thus, this study extends theoretical perspectives on collaborative learning and its role in optimizing students' academic achievements.

The findings of this study carry important implications for language learning theory. The significant cognitive gains observed across schools resonate with Krashen's Input Hypothesis, suggesting that peer tutoring-based worksheets provide students with comprehensible input in a supportive, low-anxiety environment. In addition, the model aligns with Vygotsky's Sociocultural Theory, particularly the Zone of Proximal Development (ZPD), where learners construct knowledge collaboratively by scaffolding each other's understanding. These theoretical perspectives help explain why students demonstrated consistently high improvements in their comprehension and analysis of procedural texts. The psychomotor outcomes, although somewhat varied, can also be situated within Hymes' framework of communicative competence. Beyond cognitive mastery, students engaged in authentic interactional practices that supported the development of strategic and interactional competence—skills necessary for effective communication in real contexts. The

moderate to high N-gain scores in this domain suggest that peer tutoring enabled students not only to acquire knowledge but also to practice negotiating meaning, performing tasks, and applying the Indonesian language skills in practical situations. Taken together, these findings show that the peer tutoring-based worksheet operates at the intersection of cognitive development and communicative practice. The intervention is not only pedagogically effective but also theoretically significant because it demonstrates how structured peer collaboration embodies principles of second-language acquisition and communicative language teaching. By connecting empirical evidence to foundational theories in applied linguistics, this study highlights the potential of peer tutoring to advance both language proficiency and communicative competence in classroom settings.

The practical implications of this study suggest that integrating peer tutoring-based worksheets into the curriculum can significantly improve language learning in elementary education. Teachers can use structured peer tutoring sessions to enhance students' comprehension and application of procedural texts in the Indonesian language lessons. The use of worksheets ensures consistency in instruction while promoting active engagement and collaboration among students. Additionally, the findings indicate that peer tutoring fosters a positive learning environment, reducing students' anxiety and increasing their confidence in language use. Educators can adapt the worksheet-based peer tutoring approach to suit diverse learning styles and needs, making language instruction more inclusive and effective. School administrators can also incorporate these findings into teacher training programs, emphasizing the benefits of interactive and student-centered pedagogies. Moreover, policymakers can consider these results when designing curriculum guidelines that prioritize peer learning as a complementary instructional method. The study's results highlight the necessity of moving beyond traditional textbook-based instruction to more dynamic and participatory learning strategies. Implementing peer tutoring-based worksheets can ultimately lead to long-term improvements in students' language proficiency and overall academic performance. Therefore, the practical applications of this study underscore the importance of innovative teaching methods in fostering meaningful and effective learning experiences.

5.3. Limitations and Suggestions

The present study has several limitations that should be acknowledged to provide a clearer perspective on its findings. One of the main limitations is that the study was conducted only in a limited number of elementary schools, which may not fully represent the broader student population. Additionally, the study primarily focused on the Indonesian language subject, making it difficult to generalize the effectiveness of peer tutoring-based worksheets to other subjects. Another limitation is that the research relied on a relatively short intervention period, which may not have captured long-term effects on students' learning outcomes. Furthermore, the study did not extensively examine the role of individual differences, such as students' prior knowledge, learning styles, and motivation levels, which could have influenced the results. The reliance on teacher-reported data and student surveys, while valuable, may also introduce response bias, potentially affecting the reliability of the findings. The study did not compare peer tutoring-based worksheets with other instructional strategies, limiting the scope of pedagogical implications. Additionally, classroom dynamics and teacher facilitation were not analyzed in depth, which may have played a role in students' engagement and learning progress. The use of a single methodological approach further restricts the study's ability to provide a holistic understanding of the impact of peer tutoring-based worksheets. Lastly, the study did not explore the potential challenges teachers may face in implementing peer tutoring-based worksheets in different classroom settings.

To address these limitations, future research should consider expanding the study to a larger and more diverse sample of schools to enhance the generalizability of the findings. Longitudinal studies should be conducted to examine the long-term effects of peer tutoring-based worksheets on students' learning outcomes. Additionally, researchers should investigate the application of this instructional approach in other subjects to determine its broader educational effectiveness. Incorporating a mixed-methods research design that includes both qualitative and quantitative data would provide a more comprehensive understanding of the intervention's impact. Future studies should also explore the influence of individual differences, such as cognitive abilities and motivation, on the effectiveness of peer tutoring-based worksheets. Comparative studies with other instructional strategies, such as problem-based learning or direct instruction, could further

highlight the strengths and limitations of peer tutoring. Teachers' perspectives on implementation challenges should be examined to develop practical guidelines for integrating peer tutoring-based worksheets into various classroom contexts. Further research should analyze classroom interactions and the role of teacher facilitation to optimize the effectiveness of peer tutoring sessions. Researchers should also investigate the potential of digital or interactive worksheets to enhance student engagement and learning experiences. Addressing these areas would contribute to a more robust understanding of how peer tutoring-based worksheets can be effectively utilized in education.

6. Conclusion

The present study concluded that peer tutoring-based worksheets significantly enhance students' learning outcomes in the Indonesian language, particularly in cognitive and psychomotor aspects. The findings demonstrated that structured peer interactions facilitated better comprehension, retention, and application of procedural texts, aligning with the principles of social constructivist theory. The statistical results, including the high N-Gain scores and significant paired sample t-test values, confirmed the effectiveness of this instructional approach. Furthermore, both teachers' and students' responses indicated a strong preference for using peer tutoring-based worksheets, highlighting their practicality and engagement potential. The discussion reinforced that cognitive improvements were driven by active participation, structured guidance, and peer collaboration, allowing students to process information more effectively. Meanwhile, psychomotor skills improved through hands-on learning activities, immediate feedback, and repetitive practice, which helped students develop confidence and fluency in language application. These findings suggest that integrating peer tutoring-based worksheets into the curriculum can provide an effective alternative to traditional textbook-based learning. The study also underscored the importance of fostering a more interactive and student-centered learning environment in elementary education. Despite its limitations, this study contributes to the growing body of research advocating for collaborative learning strategies in language education. Future research should further explore the scalability and long-term impact of peer tutoring-based worksheets across diverse educational contexts.

Author Contributions

A.I. and U.A.M. contribute in analyzing, designing, and developing the peer tutoring-based worksheet in the fifth-grade classroom of the Indonesian language. S.S. contributes in implementing the peer tutoring-based worksheet in the fifth-grade classroom of the Indonesian language, and collecting the data regarding students' learning outcomes in the Indonesian language. Meanwhile, M.N. and H. contributes in organizing and analyzing the data, and interpreting it. They hold together in writing the report to be a manuscript.

Funding

This study is greatly supported by the institute of research and innovation of University of Lampung (Grant Number: UN.23/FKIP/UNILA/2307/2024).

Institutional Review Board Statement

The higher educational authority of University of Lampung has been permitted us to do the survey and involve students as human participant in this study (Letter Number: B-11412/UN40.A4.1/PK.01.03/2024).

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data regarding the relationships between student perceptions on teacher and academic environment, goal orientation, learning approach, and academic achievement can be accessed by contacting the email: nurwahidinmuhammad@gmail.com.

Acknowledgments

Authors thank to the educational authorities in the city of Bandar Lampung who have permitted us to implement the prototype of peer tutoring-based worksheet in three elementary schools, particularly at fifth-grade classroom, and get the data regarding the enhancement of students' learning

outcomes in the Indonesian language, including cognitive and psychomotor aspect.

Conflicts of Interest

The authors declare no conflict of interest.

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