

Innovative Psycholinguistics Textbook Development for Graduate Students in Primary Education

Nurul Istiq'faroh¹, Hendratno², Ari Susandi³, Ghozali Rusyid Affandi⁴, Amiruddin Hadi Wibowo⁵, Asia Ashfaq⁶

¹²Faculty of Education, Universitas Negeri Surabaya

³Faculty of Science, Technology and Education, Universitas Muhammadiyah Lamongan

⁴Faculty of Psychology and Education, Universitas Muhammadiyah Sidoarjo

⁵Faculty of Teacher Training and Education, Universitas Wijaya Kusuma Surabaya

⁶Department of Humanities & Social Sciences, Bahria University Pakistan

ABSTRACT: Psycholinguistics is an interdisciplinary study involving linguistics, psychology, cognitive science, and neuroscience. It plays a vital role in understanding how language is acquired, comprehended, and produced, especially in elementary school students. However, the available psycholinguistic teaching materials are mostly focused on theory, foreign language, and less on contexts relevant to teachers' needs. There is a need for textbooks that connect theory with practice, school-based language learning, and foundational research. This study aims to develop a psycholinguistics textbook with contextual innovation for master's degree students, particularly school teachers. The research employed the ADDIE model (Analyze, Design, Develop) by compiling relevant, communicative, visual, and case study-based materials derived from real classroom scenarios. Data were collected through expert validation and practicality tests with students using questionnaires and Likert scales. Validation results indicated that subject matter experts rated the textbook as 60% very good and 40% good, while media experts rated it 80% very good and 20% good, showing overall feasibility in the "very good" category. The practicality test with graduate students also yielded positive responses, with 77% rating the textbook very good and 23% good. These findings demonstrate that the textbook is academically valid, practically useful, and relevant for bridging theory with classroom practice. Nevertheless, improvements are still required in the visual design and the inclusion of contextual case studies to enhance student engagement.

KEYWORDS-psycholinguistics, textbooks, basic education, development, teaching materials, ADDIE.

I. INTRODUCTION

Psycholinguistics is a branch of science that studies the connection between language and mental processes, especially how humans acquire, understand, produce, and store language (Alduais et al. 2022; Beibei 2023). This is an interdisciplinary field that combines linguistics, cognitive psychology, neuroscience, and education. The main focus of psycholinguistics is on the internal mechanisms of the brain involved in the acquisition of language first, the acquisition of language second, and how language is processed in thought in real-time (Phillips and Ehrenhofer 2015; Wong and Barcroft 2024). In the context of child development, psycholinguistics offers important insights into how speaking ability naturally develops, influenced by biological, environmental, and social experiential factors (Marcelino 2024).

In the field of basic psycholinguistics, it is highly relevant because it helps teachers understand language development in children, the challenges faced during language development, and suitable learning strategies (Purba 2018). Psycholinguistics studies stages including phonological, morphological, syntactic, and semantic development, which can assist teachers in designing materials and approaches suitable for learners' age and abilities (Sudrajat 2017; Hutaaruk et al. 2023). By understanding the principles of psycholinguistics, teachers can teach language not just mechanically, but also consider the cognitive and emotional factors influencing language acquisition. This makes psycholinguistics a vital foundation for designing language learning in schools.

However, observations of practice lectures show that psycholinguistics teaching materials available at universities are still dominated by books speaking of foreign concepts and oriented towards theoretical approaches. Books are not always relevant to the needs of Master of Elementary Education students, who focus on solving real problems in a classroom setting. In fact, the

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development of teaching materials should not only serve abstract concepts but also include studies of relevant cases with characteristics based on children in school (Krajcik and Czerniak 2018; Hsu, Chang, and Hung 2018).

Master's program students who come from a teaching background need capable textbooks to bridge theory and practice. Developed a contextual textbook that can help them understand the acquisition process of Language in children as well as the implementation of psycholinguistic learning theories. In addition, innovative textbooks are also expected to be capable of increasing literacy and academic performance of students through presentation, communicative, visual, and content-based activity reflective (Raquel 2024; Deng 2025). Conditions This shows the need for development of psycholinguistics textbooks that are not only valid from an academic perspective, but also responsive to the needs of field education.

Research in the field of psycholinguistics shows diverse focus; however, it still tends to be theoretical. Ellis (2019) studied the mechanism of language acquisition from a cognitive psychological perspective, highlighting how mental processes influence language ability. Prins et al. (2023) emphasize the interaction between social and experiential environments in children's language development, providing an important basis for naturally understanding language acquisition. In contrast, Newbury et al. (2020) and Gillon & Macfarlane (2017) focused on their studies of the relationship between cognitive development, phonological awareness, and early literacy skills, including intervention strategies to help children in elementary school who experience difficulty speaking. Although these findings offer a strong theoretical foundation, overall, they mainly focus on understanding learning concepts and strategies in a general way, not yet addressing the development of psycholinguistically designed teaching materials, specifically for master's students in education.

This study has not yet been further identified regarding problems. The existing integrated research findings in psycholinguistics are pertinent to communicative and relevant textbooks based on the practices of school teachers in Indonesia. Consequently, this research offers an original contribution by addressing existing gaps through the development of a psycholinguistics textbook that integrates academic rigor with practical relevance in basic education. Therefore, this study aims to develop an innovative psycholinguistics textbook tailored to the needs of postgraduate students.

II. METHOD

A. Research Design

This study used the research and development (R&D) method with the ADDIE model (Analyze, Design, Develop, Implement, Evaluate) because it offers systematic stages in design and produces effective, relevant teaching materials (Usta & Güntepe). In the Analyze stage, user needs are identified through interviews and questionnaires targeting education students preparing to become elementary school teachers. Curriculum analysis considers psycholinguistics and learner characteristics. The Design stage involves setting learning objectives, creating a content framework, choosing presentation formats, developing communication and visual materials, and selecting appropriate learning and evaluation strategies. The Develop stage includes writing the material thoroughly with real examples suitable for elementary school, creating supporting illustrations, and validation by psycholinguistics experts, basic education specialists, and learning design experts, followed by revisions based on expert feedback. The Implement stage involves limited trials with students to assess the textbook's understandability, feasibility, and relevance. Lastly, the Evaluate stage occurs both during development (formatively) and after implementation (summatively). This evaluation examines the content, language, presentation, and practicality of the psycholinguistics textbook for learning in the master's of Education program. Since this study is limited to the development stage, implementation and evaluation have not yet been carried out. The focus remains on preparing and refining a valid psycholinguistics textbook, including its content and design, prior to further testing.

B. Data collection technique

Data were collected using a questionnaire distributed to experts and students for validation and practicality tests to develop a psycholinguistics textbook. There are two types of experts involved in validation: subject matter experts and media/design experts. The subject matter expert is knowledgeable in psycholinguistics and education, and their assessment considers the textbook content's accuracy, depth, relevance to the curriculum, and integration of theory with examples suitable for elementary school. Meanwhile, the media expert specializes in developing teaching materials that evaluate aspects such as appearance, readability, layout, use of illustrations, and visual appeal. Figure 1 shows the psycholinguistics book designed for schools, which forms the basis of this development.

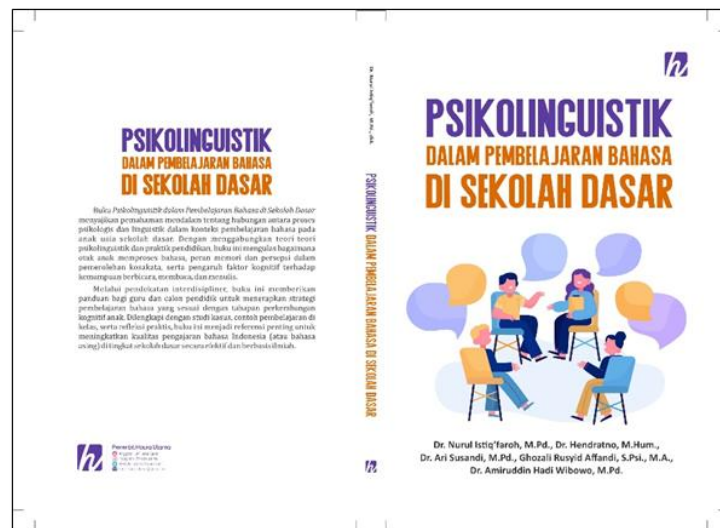


Figure 1. Book Psycholinguistics in Learning in Elementary School

In addition to validation experts, practicality tests were also conducted to determine the ease of use and usefulness of the textbook for users. Participants in the practicality test included students from the Master of Education program, specifically basic students, who evaluated various aspects such as understanding of language, accuracy in terms of psycholinguistics, sequencing of material, relevance through case studies, as well as the benefits of the book as a learning guide. The questionnaire employed a Likert scale ranging from 1 to 5 for each indicator assessment, with additional space provided for comments and suggestions for improvement. Data collected from the questionnaires were analyzed to assess the feasibility and practicality of the textbooks, serving as a basis for revisions during the development stage.

C. Data Analysis Techniques

The data were analyzed using descriptive quantitative and qualitative methods derived from the evaluation of results, including validation by experts, assessment by media/design specialists, and practical testing conducted by students. Each item was evaluated using a Likert scale ranging from 1 to 4. The scores obtained were summed and divided by the maximum possible score to calculate a percentage of eligibility or practicality. The percentage interpretations were based on the following criteria: 81–100% (very feasible / very practical), 61–80% (feasible / practical), 41–60% (sufficient/adequate), 21–40% (less feasible / less practical), and ≤20% (not feasible / not practical).

Qualitative data obtained from comments and suggestions for improvement provided by experts and students. This data is analyzed to identify strengths and weaknesses of the product, highlighting good and bad aspects. eligibility content, media display, and convenience use textbook. Analysis results, quantitative and qualitative, are used as the basis for revision of the product at the development stage, so that the resulting textbooks are not only valid in academic settings, but also practical, used in the field.

III. RESULTS

Validation results carried out by experts show that the developed psycholinguistics textbook meets the eligibility criteria for its content. The following is Table 1, which shows the evaluation results by expert material.

Table 1. Validation Results Book Psycholinguistics in Elementary School by Subject Matter Experts

No	Assessment Aspects	Score			
		1	2	3	4
1.	Content in the book in accordance with Indonesian language curriculum			√	
2.	The material presented in book Enough in-depth and comprehensive For level understanding student				√
3.	The material presented relevant with interests and needs student				√
4.	Book serve various type knowledge elementary school psycholinguistics that can interesting student For Study			√	
5.	There is a clear connection between material taught and abilities read what you want improved .			√	
6.	The material was delivered with clear and easy understood by students				√

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No	Assessment Aspects	Score			
		1	2	3	4
7.	Material capable push involvement active student in the learning process .			√	
8.	Language used in book in accordance with level understanding master of education students base				√
9.	Book shows moral values that can taken from every discussion				√
10.	Book support achievement objective learning that has been set .				√

Based on the results of validation by the expert material, the psycholinguistics textbook was assessed as worthy for use, with 60% of the aspects rated as very good (score 4) and 40% rated as good (score 3). The 'Very Good' category covers depth and relevance of material, clarity of delivery, language conformity, and moral values, while the 'Good' category includes suitability of content with the curriculum, presentation of knowledge appropriate for elementary school psycholinguistics, the relationship of material with reading ability, student involvement, and support for achieving learning objectives.

Furthermore, results validation carried out by media experts show that the developed psycholinguistics textbook fulfils the criteria for media suitability. The following Table 2 shows results evaluation by media experts.

Table 2. Validation Results Book Psycholinguistics in Elementary Schools by Media Experts

No	Assessment Aspects	Score			
		1	2	3	4
1.	Quality book is interesting and appropriate for student				√
2.	Quality colors and images support delivery material with good				√
3.	Graphic design in a book is interesting and not confusing				√
4.	Book has interactive element that can increase interest in the Study student				√
5.	Book has appropriate and inappropriate too long for attention, student moment read			√	
6.	The use of backgrounds is attractive and does not distract the focus of students				√
7.	Transition between material walk with smooth and not bother channel study student				√
8.	The media used (animation, images, text) are appropriate for convey material				√
9.	Book easy accessible to students, both from aspect device and platforms			√	
10.	Book show innovation in delivery material that can interesting attention student				√

Based on results from media expert validation and the assessment of the psycholinguistics textbook, it was deemed worthy of use, with 80% of aspects rated as very good (score 4) and 20% rated as good (score 3). The very good ratings were given for the quality of appearance, color suitability, images, graphic designs, interactive elements, background use, transition material, media suitability, and innovation in delivery. Meanwhile, the "Good" category was assigned to the aspect of the book's length being appropriate, with attention to students and easy access. These results show that the book fulfills the criteria for very good media suitability, although there are still some technical aspects that can be improved.

Furthermore, this book has been tested to evaluate its practicality among Master of Elementary Education students at Surabaya State University (UNESA). The assessment was conducted through a questionnaire that covers ten aspects, ranging from understanding language and precision in psycholinguistics terms, sequencing material, relevance to case studies, to the usefulness of the book as a learning guide. The assessment results are presented in Table 3 below.

Table 3. Practicality Test Results Book Psycholinguistics in Elementary School

No	Aspect	Score				
		1	2	3	4	5
1	Internal language book easy understood and appropriate with term proper psycholinguistics .				1	10
2	Book material arranged sequential in accordance draft				2	8

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No	Aspect	Score				
		1	2	3	4	5
	psycholinguistics and stages development Language elementary school children .					
3	Case study in book clear and relevant with implementation psycholinguistics in the classroom .				4	6
4	Explanation theory psycholinguistics in book make it easier I understand connection language and cognitive processes .				3	7
5	Book This help I understand factor psychological influences acquisition Language .				2	8
6	Book material motivating I For apply principle psycholinguistics in learning Language .				2	8
7	Book This practical used as guide For designing learning strategies Language based psycholinguistics .				2	8
8	Explanation material linking theory psycholinguistics with practice learning in a way clear .				3	7
9	Book This beneficial as reference For assignments and research .				2	8
10	In a way whole book This practical used as psycholinguistic teaching materials in context education base .				3	7
Total					24%	77%

Based on the assessment results, this book received a very positive response, with 77% rating it as very good and 24% as good. Most respondents found the language used easy to understand, considered the term psycholinguistics appropriate, and appreciated the material's organization in a sequence aligned with the developmental stages of elementary school children. The case study was relevant, and the theoretical explanations facilitated understanding of the connection between language and cognitive processes, as well as psychological factors in language acquisition. Additionally, this book encourages applying psycholinguistics principles in learning, linking theory with practice clearly and practically, serving as a reference for assignments and research, and acting as a useful guide for learning strategies and psycholinguistic teaching materials in education.

Based on the results mentioned, the psycholinguistics textbook can serve as a ready resource to support studies in eye-tracking psycholinguistics within the master's program in education. However, it still requires improvements before progressing to the implementation stage in ongoing research. The revisions will focus on improving visual quality, adding real case studies from schools, and incorporating reflective activities that help students connect theory with practice. These research findings form an important foundation to ensure that the developed products are not only academically valuable but also directly applicable for teaching and learning in the field.

IV. DISCUSSION

Research results show that the developed psycholinguistics textbook receives very positive evaluations from expert material and media specialists, with an average eligibility score of 85.5%. The high validation score from experts indicates that the content meets academic criteria, is relevant to the curriculum of the basic master's of education program, and demonstrates good integration between theories and examples. This finding aligns with the opinion of Tonawanik & Donayanik (2019), who emphasized that good teaching materials must incorporate accurate, relevant, and appropriate content that meets learners' needs. Additionally, the quality of teaching materials is determined by scientific accuracy, suitability to the context, and their ability to facilitate optimal learning outcomes (Firman, Baedhowi, and Murtini 2018). Furthermore, integrating relevant materials and activities increases student engagement and motivation, so teaching materials tailored to learners' needs can create a more effective and meaningful learning process (Tsai et al. 2020).

Validation by media experts also provides a very decent evaluation, especially on readability, text layout, consistency, and the use of fonts that make it easy to read. This aligns with the design principles proposed by Guo et al. (2020), stating that a neat and structured visual display can increase understanding and retention among learners. Media experts advise enriching visuals with illustrations, diagrams, and infographics, which aligns with Alabi's (2024) findings confirming the importance of visual elements for motivating learners and strengthening understanding of concepts. Thus, strengthening visual aspects during the revision stage will improve the overall quality of this textbook.

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A qualitative comment from a second group expert indicates that the main strength of the book is the balance between theory and application. However, areas that need improvement include adding contextual and visual variations. This aligns with the view of Kostiainen et al. (2018), who stated that teaching materials must provide opportunities for learners to connect the material with real-life experiences, making learning more meaningful. In the context of master of education students, most of whom are pursuing a career as teachers, real examples and case studies are important because understanding psycholinguistics should not only be approached from a cognitive perspective but also implemented in practical teaching (Ticheloven et al. 2021).

Based on the results, it can be concluded that the psycholinguistics textbook meets the eligibility criteria. It has good content and media quality and has the potential to be used for learning psycholinguistics in basic master's education programs. However, input from experts indicates the need for improvements in visual aspects and the addition of contextual case studies before the product is ready for implementation. These improvements are expected to increase student engagement, strengthen the connection between theory and practice, and ensure that this textbook truly becomes a useful and relevant resource that meets the needs of teachers in Indonesian schools.

CONCLUSION

This innovative and contextual psycholinguistics textbook, designed for master's students in education, demonstrates strong academic value, with an average eligibility score of 85.5% based on expert validation in both content and media. This study has significant value across various categories. The textbook balances theoretical explanations with practical applications in classroom settings, ensuring content alignment with the curriculum, and provides readability and a consistent design. However, validation results also highlight the necessity for improvements in visual aspects and the inclusion of contextual learning examples to enhance engagement and relevance to real school scenarios. As a comprehensive psycholinguistics textbook, it can serve as an educational resource for undergraduate and graduate students studying psycholinguistics in education, providing a solid foundation for future development, research, and classroom implementation.

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