



EXPLORING THE USE OF CHATGPT IN DEVELOPING INSTRUCTIONAL MATERIALS BY SENIOR HIGH SCHOOL INDONESIAN LANGUAGE TEACHERS IN MALUKU: A MIXED-METHODS STUDY

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Abstract. The integration of artificial intelligence (AI), particularly ChatGPT, has become increasingly significant in Indonesian language instruction at the secondary school level. In the context of curriculum transformation and the demands of digital learning, teachers are required to develop adaptive, creative, and contextually relevant instructional materials. This study employed a sequential explanatory mixed-methods design. Quantitative data were collected through questionnaires distributed to senior high school Indonesian language teachers in Maluku, followed by qualitative data collection through in-depth interviews to further explain and elaborate on the quantitative findings. Data were analyzed using quantitative statistical techniques and qualitative thematic analysis to provide a comprehensive understanding of the utilization process and its implications. The findings indicate that ChatGPT has been effectively utilized as a supportive tool in developing instructional materials, including lesson plans, student worksheets, and assessment instruments. Its use contributes to increased variation and creativity in materials, improved linguistic accuracy, stronger alignment with the Merdeka Curriculum, and greater contextual relevance to students' needs. However, teachers remain actively involved in selection, modification, validation, and contextualization to ensure academic integrity and pedagogical appropriateness. Overall, ChatGPT functions as a tool that strengthens teacher professionalism rather than replacing pedagogical roles. The findings highlight the importance of teachers' critical and ethical engagement with AI and underscore the need for autonomous, responsible policies to guide the integration of AI into Indonesian language education.

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INTRODUCTION

The development of artificial intelligence (AI) technology, such as ChatGPT, in recent years has brought significant changes to the field of education (Arini & Nursaban, 2024; van den Berg & du Plessis, 2023; Cucci et al., 2025). ChatGPT, developed by OpenAI, is known for its ability to generate contextualized text, assist in formulating ideas, simplify complex concepts, and support various academic and pedagogical activities, including lesson planning (Kasneci et al., 2023; Domènech, 2023). The presence of this technology opens new opportunities for teachers to improve work efficiency, lesson planning quality, and creativity in designing learning tools that suit students' needs (Pudjiadi et al., 2024).

Although it offers significant potential, the use of AI in education also presents a range of challenges, particularly regarding ethics, teacher professionalism, and academic integrity. Uncontrolled AI use can undermine teachers' reflective roles, reduce the originality of lesson planning, and foster dependence on technology (Balta, 2023; Sareen, 2023). Therefore, the use of AI, including ChatGPT, requires a thorough understanding, a critical attitude, and clear usage guidelines so that this technology can truly function as a pedagogical aid rather than a substitute

for teachers' professional roles. A balanced approach between technological innovation and educational values is an essential prerequisite for integrating AI into the school environment (Domènech, 2023).

In secondary education, particularly at the Senior High School level, teachers play a crucial role in designing learning tools, including syllabuses, teaching modules, teaching materials, and assessment instruments (Datnow, 2020; Neugebauer, 2019). Indonesian language teachers are required to have a high level of competence in language aspects, academic writing skills, text analysis, and the systematic formulation of learning objectives and activities. Several studies have shown that the use of generative AI, including ChatGPT, has the potential to assist educators in organizing learning materials more systematically, enriching content variety, and saving time in the planning process (Marzuki et al., 2023; Malik et al., 2023). However, the extent to which and how teachers utilize this technology in real teaching practice requires an in-depth empirical study, especially in the context of secondary education.

In Indonesia, the use of ChatGPT in education has begun to attract attention, including in the Maluku region of Eastern Indonesia. Maluku is characterized by its vast archipelago geography, with uneven educational and technological infrastructure between urban and rural areas (Nursalam et al., 2023). Limited access to learning resources, professional training, and digital facilities in some areas may affect teachers' adoption and use of AI technology (Althubyani, 2024; Nursalam et al., 2025). In such situations, teachers in Maluku may develop distinctive strategies for using ChatGPT, for instance, to assist in developing lesson tools when access to references is limited, support the independent development of teaching materials, or adapt teaching to their students' local context.

Previous studies have shown that integrating AI into education can improve the effectiveness of lesson planning, enrich pedagogical strategies, and help educators manage administrative work (Kasneci et al., 2023; Pudjiadi et al., 2024). Other studies have also highlighted challenges, including concerns about information accuracy, the originality of materials, and the need to balance technological use with educators' professional competence (Khalil & Er, 2023; Balta, 2023; Chan & Hu, 2023; Athanassopoulos et al., 2023). Nevertheless, most of these studies still focus on higher education or are conducted in other countries. Similarly, in Indonesia, research on AI use has mainly focused on higher education institutions. Nursalam et al. (2025), for example, focus on university students' use of ChatGPT in writing scientific papers. Marlin et al. (2023) also reported that the use of ChatGPT in higher education supports learning and material preparation. The majority of students felt aided and gave positive assessments of ChatGPT, although challenges remained in evaluating its information accuracy (Alatas et al., 2024).

Although these studies have covered ChatGPT use in education, research specifically exploring its use by Indonesian language teachers at the SMA level, especially in archipelagic regions such as Maluku, remains very limited. To date, there has been little research that comprehensively examines how Indonesian language teachers in Maluku SMA use ChatGPT to develop learning tools, including usage intensity, utilization strategies, and teachers' perceptions of this technology. However, understanding teachers' practices and perspectives is crucial as a basis for policymaking, professional development, and the formulation of ethical guidelines for AI use in secondary education. This research gap necessitates further studies that balance quantitative and qualitative data collection (Joyce, 2025).

Therefore, this study was designed using a mixed-methods approach to thoroughly explore the use of ChatGPT in preparing learning tools by Indonesian language teachers at the senior high school level in Maluku. The objectives of this study are two-fold: (1) to provide a comprehensive description of the process by which senior high school Indonesian language teachers in Maluku utilize AI ChatGPT in the development of instructional materials, and (2) to explain the implications of ChatGPT utilization for the quality of these instructional materials. Through these objectives, the study is expected to offer both theoretical and practical contributions to the growing body of literature on AI integration in education, particularly within the context of secondary education and archipelagic regions. Furthermore, it aims to serve as a

reference for policymakers and educational practitioners to optimize the responsible and ethical use of ChatGPT in educational settings.

RESEARCH METHODS

This study employed a mixed-methods design with a sequential explanatory approach, combining quantitative and qualitative data in complementary stages. In the initial stage, quantitative data were collected to gain an overview of ChatGPT usage patterns among high school Indonesian language teachers in preparing their learning materials. Subsequently, qualitative data were gathered through in-depth interviews to interpret and enrich the quantitative findings, particularly regarding the utilization strategies and teachers' perceptions of using ChatGPT. This approach was chosen because it enabled the researchers to obtain a comprehensive understanding of general trends and teachers' contextual experiences. The study has one main variable: the use of ChatGPT by high school Indonesian language teachers in preparing learning tools, such as teaching modules, assessment instruments, exercises, and teaching materials.

Two types of instruments were used in this study: quantitative and qualitative. The quantitative instrument was an online questionnaire comprising 20 closed- and semi-closed-ended Likert-scale questions. The questionnaire was designed to measure the usage intensity, forms of utilization, and teachers' perceptions of ChatGPT for preparing learning materials. The development of the instrument involved several stages: (1) determining indicators based on research objectives, (2) drafting statement items, (3) content review by two experts in language education and educational technology, and (4) revising the instrument based on the expert feedback. A limited pilot test was conducted with several teachers outside the main sample to ensure item clarity and response consistency. Instrument reliability was tested using Cronbach's alpha coefficient, with a value of ≥ 0.70 considered to indicate adequate internal consistency (Nunnally, 1978). The qualitative instrument was a semi-structured interview guide developed from the initial analysis of the quantitative data. The interview guide included open-ended questions about teachers' experiences with ChatGPT, strategies for using it to develop learning tools, perceived benefits, encountered challenges, and ethical and professional perspectives on AI use in schools. The guide was piloted with one teacher to ensure the clarity and relevance of the questions before it was used for data collection.

The study population consisted of high school Indonesian language teachers from various public and private schools in Maluku Province. The quantitative sample was determined using purposive sampling with the following criteria: (1) currently serving as active high school Indonesian language teachers, (2) having experience using ChatGPT or similar AI applications, and (3) being directly involved in the preparation of learning materials. Based on these criteria, 49 teachers participated in this study. For the qualitative stage, three teachers were selected from the survey participants using a maximum variation sampling technique, considering differences in years of teaching experience, ChatGPT use intensity, and school location (urban and non-urban). This selection aimed to gather diverse perspectives and experiences on the use of ChatGPT across various contexts.

Quantitative data were collected using an online questionnaire distributed via Google Forms for two weeks in November 2025. The questionnaire link was shared through WhatsApp teacher community groups and the Bahasa Indonesia Teachers' Working Group networks in six regencies/cities in Maluku: South Buru Regency, Central Maluku Regency, West Seram Regency, East Seram Regency, Southeast Maluku Regency, and Ambon City. To increase the response rate, the researcher provided regular reminders and limited the questionnaire completion time to approximately 8–10 minutes. Qualitative interviews were conducted in December 2025 after the survey results were descriptively analyzed. The interviews were conducted online via Zoom and lasted approximately 40–50 min each. All interviews were recorded with participants' written consent and transcribed verbatim. Prior to the interviews, the participants were given an informed consent form explaining the study's objectives, their rights, and data confidentiality.

Quantitative data were analyzed using descriptive statistics, including frequencies, percentages, and mean values, to illustrate patterns of ChatGPT use among teachers. The analysis



was conducted in Microsoft Excel, which provides basic statistical analysis features. The results of the quantitative analysis were used to determine the focus of the qualitative stage exploration. Qualitative data were analyzed using thematic analysis. This process began with a thorough re-reading of the interview transcripts, followed by initial coding to identify meaning units relevant to the research focus. Codes with similar meanings were grouped into categories, which were further developed into main themes and subthemes. The entire analysis process was conducted manually using coding tables and analytical notes to maintain the depth of data interpretation. Data integration was performed at the interpretation stage, where qualitative findings were used to explain, enrich, and interpret the quantitative results. This approach aligns with the principles of sequential explanatory design in mixed-methods research, which emphasize the interrelation between quantitative and qualitative data to achieve a comprehensive understanding of the phenomenon under study (Creswell, 2009; Pudjiadi et al., 2024).

RESULTS AND DISCUSSION

This study comprehensively illustrates the use of ChatGPT by Indonesian language teachers at senior high schools in Maluku, covering the process of using ChatGPT to develop teaching materials and its implications for the quality of the resulting materials.

1. Process of Using AI ChatGPT in Developing Teaching Materials

Teachers have their own perceptions of using ChatGPT to prepare teaching materials for their classes. The study found that most respondents viewed ChatGPT as an effective technical aid for preparing teaching materials. A total of 22.4% of respondents strongly agreed, and 63.3% agreed that ChatGPT made it easier to prepare comprehensive teaching materials. Regarding the preparation of Indonesian-language student worksheets (LKPD), 16.3% strongly agreed, 63.3% agreed, and 20.4% were indifferent. Regarding writing questions and assessment instruments, 18.4% of respondents strongly agreed, 55.1% agreed, and 22.4% remained neutral. Meanwhile, the use of ChatGPT to create multiple types of teaching materials received positive responses from 14.3% who strongly agreed and 59.2% who agreed, while 24.5% were neutral and 2% disagreed. For more details, see Table 1, which explains the use of ChatGPT as a technical aid in preparing teaching materials.

Table 1. Indicators for Utilizing ChatGPT as a Technical Tool in Developing Learning Materials

Statement	Rating Scale				
	1	2	3	4	5
AI ChatGPT facilitates the development of comprehensive instructional materials.	22,4%	63,3%	14,3%	0%	0%
AI ChatGPT is used to prepare LKPD (Student Worksheets) for Indonesian language instruction.	16,3%	63,3%	20,4%	0%	0%
ChatGPT assists in developing assessment questions and evaluation instruments.	18,4%	55,1%	22,4%	0%	0%
AI ChatGPT is used to develop multiple types of instructional materials.	14,3%	59,2%	24,5%	2%	0%

Rating scale: 1=; Strongly agree; 2= Agree; 3= Neutral; 4= Disagree; 5= Strongly Disagree

Table 1 shows that ChatGPT is perceived as a technical tool that simplifies and accelerates the preparation of learning materials, while still requiring teacher adjustment. This finding is in line with Chiu et al. (2023) views, who emphasized the role of digital technology and AI in increasing teacher productivity, reducing administrative burdens, and expanding opportunities for adaptive instructional design. Notably, 63.3% of the respondents agreed that ChatGPT facilitated the creation of learning materials such as LKPD. This finding confirms that ChatGPT has become a technical aid for teachers in preparing a range of learning materials to support classroom instruction. This is supported by the informants' statements in the following excerpts from the interview.

P2 : *"I very frequently use ChatGPT when preparing student worksheets (LKPD), modules, instructional materials, and assessment questions. ChatGPT is highly helpful because it*



enables me to develop more than one type of instructional material simultaneously in a more efficient and time-effective manner."

P3 : *"ChatGPT continues to function as a supportive assistive tool that facilitates teachers' work in the instructional process."*

Statements from Informants P2 and P3 emphasized that ChatGPT provides significant technical support in helping teachers prepare various learning materials efficiently and effectively. P2, who often uses ChatGPT to prepare worksheets (LKPD), modules, materials, and assessment questions, stated that this AI accelerates teachers' workflow and enables the simultaneous preparation of multiple learning materials: Furthermore, P3's statement reinforces that ChatGPT is positioned as a supportive tool in the learning process, ensuring that its role remains under the teacher's control: This aligns with the data findings indicating that 63.3% of respondents agreed with the ease that ChatGPT offers in preparing learning materials, especially Indonesian Language worksheets (LKPD). Thus, the use of ChatGPT serves not only as a technical tool to improve teacher efficiency but also as a supporting device that enhances the quality and continuity of classroom learning.

Then, respondents assessed data on the use of ChatGPT in the development, adjustment, and enrichment of Indonesian language learning materials, finding it to have a positive role. As many as 63.3% of respondents agreed, and 24.5% strongly agreed, that ChatGPT's output needed to be and could be further adjusted to meet students' needs, while 59.2% agreed and 26.5% strongly agreed that ChatGPT helped tailor materials to the learning outcomes. Furthermore, the majority of respondents also stated that ChatGPT helps in generating teaching ideas (59.2% agree, 24.5% strongly agree), developing literature- and non-literature-based materials (67.3% agree, 20.4% strongly agree), composing example texts according to genre (59.2% agree, 26.5% strongly agree), and developing critical reading materials (65.3% agree, 16.3% strongly agree). [Table 2](#) summarizes these findings.

Table 2. Indicators of ChatGPT Utilization in the Development, Adaptation, and Enrichment of Indonesian Language Teaching Materials

Statement	Rating Scale				
	1	2	3	4	5
Re-adapting AI-generated ChatGPT outputs to students' learning needs	24,5%	63,3%	12,2%	0%	0%
AI ChatGPT assists me in aligning Indonesian language instructional materials with learning outcomes.	26,5%	59,2%	12,2%	2%	0%
AI ChatGPT helps me generate instructional ideas for Indonesian language learning.	24,5%	59,2%	12,2%	4,1%	0%
AI ChatGPT supports the development of teaching materials based on literary and non-literary texts.	20,4%	67,3%	10,2%	2%	0%
AI ChatGPT assists in generating sample texts for specific genres (narrative, exposition, argumentation, etc.).	26,5%	59,2%	12,2%	2%	0%
AI ChatGPT supports the development of instructional materials for critical reading skills.	16,3%	65,3%	14,3%	4,1%	0%

Rating scale: 1=; Strongly agree; 2= Agree; 3= Neutral; 4= Disagree; 5= Strongly Disagree

The research data in [Table 2](#) emphasize that ChatGPT is an effective tool for enriching and developing Indonesian language learning materials. This aligns with the view of [Kasneci et al. \(2023\)](#) that the potential of generative AI lies in providing sources of ideas, text models, and variations of learning materials that can be tailored to students' needs. The majority of respondents (67.3 %) agreed that ChatGPT helps develop literary and non-literary text materials. Furthermore, 65.3% of the respondents agreed that ChatGPT helped develop critical reading lesson materials. Thus, ChatGPT has become a technical tool predominantly used by teachers to prepare Indonesian language learning materials. This is supported by the informants' statements in the following interview results.



- P1 : *“The output generated by ChatGPT is not used directly. I employ it solely as a supporting tool. Subsequently, I review and modify the content, for instance, by adjusting it to the local context of Maluku and the specific needs of students in the classroom. Thus, the resulting instructional materials remain aligned with the intended learning outcomes, while the contextualization is made more relevant to students’ everyday lives.”*
- P3 : *“ChatGPT is highly beneficial in assisting me to develop both literary and non-literary instructional materials. In the case of literary texts, I use it particularly for poetry lessons by simplifying figurative language and meaning. For non-literary texts, it can be applied to descriptive, narrative, and observational report texts. I am also able to construct sample texts in accordance with specific genres and relate them to students’ real-life contexts, thereby encouraging critical thinking during the reading process.”*

Both statements from the interviews with P1 and P3 reinforce the quantitative findings in Table 2, which show that teachers perceive ChatGPT as a pedagogical tool rather than as a source to be used directly without further processing. This is in line with previous research that warns that excessive dependence on AI-based tools without proper verification can increase the tendency towards plagiarism, ultimately potentially damaging the academic reputation and credibility of the resulting work (Satrio et al., 2024). This has already been highlighted by Borenstein & Howard (2021), who emphasized that the effectiveness of AI in education does not depend on its autonomous abilities, but rather on how well it is integrated within teachers’ professional judgment and pedagogical frameworks. Similarly, P1’s statement confirms that teachers still carry out the processes of reviewing, modifying, and contextualizing materials to align with local conditions in Maluku. P3 demonstrated the strategic use of ChatGPT to develop literary and non-literary texts, prepare genre-specific examples, and strengthen critical reading lessons by connecting the material to students’ real-life experiences. This aligns with the majority of respondents who agreed that ChatGPT helps develop literary and non-literary materials (67.3%), prepare genre-specific text examples (59.2%), and support the development of critical reading skills (65.3%). Thus, these informants’ statements emphasize that ChatGPT serves as a source of ideas, a facilitator of material development, and a supporter of teacher professionalism, while pedagogical control remains firmly in teachers’ hands through adaptation, selection, and enrichment of learning contexts.

2. Implications of AI ChatGPT Utilization on the Quality of Learning Materials

The use of AI, such as ChatGPT, has implications for the quality of learning materials. The findings of this research indicate three direct implications: improvements in planning quality and curriculum alignment, enhanced quality of content and the learning process, and increased readiness, contextualization, and usability of learning tools. The data indicating improvements in planning quality and curriculum alignment show that 61.2% of respondents agreed that instructional materials developed with the assistance of AI ChatGPT became more systematic. In addition, 69.4% of respondents agreed that ChatGPT helped align instructional materials with the Merdeka Curriculum. Regarding the clarity of assessment objectives, 51% of respondents agreed that learning objectives became clearer with ChatGPT’s support. These findings are presented in detail in Table 3.

Table 3. Indicators of Improving the Quality of Planning and Curriculum Suitability

Statement	Rating Scale				
	1	2	3	4	5
The instructional materials I developed with the assistance of AI ChatGPT are more systematic.	20,4 %	61,2%	16,3%	2%	0%
AI ChatGPT helps me align instructional materials with the Merdeka Curriculum.	16,3%	69,4%	14,3%	0%	0%
AI ChatGPT assists me in designing assessments that are aligned with learning objectives.	18,4%	51%	28,6%	2%	0%

Rating scale: 1=; Strongly agree; 2= Agree; 3= Neutral; 4= Disagree; 5= Strongly Disagree

Findings in Table 3 indicate that AI ChatGPT has a positive impact on teachers’ ability to design more structured learning tools aligned with curriculum demands and clear learning



objectives. The predominance of positive assessments of ChatGPT's potential is evident in 69.4% of respondents stating that ChatGPT can help tailor learning tools to the current Merdeka Curriculum implemented in schools. This finding is consistent with the literature, which emphasizes that AI technology can support the alignment of curriculum, learning objectives, and assessments by providing a logical, standardized planning structure (Luckin et al., 2022; Holmes et al., 2022). Nevertheless, teachers still make modifications to prevent students from misusing AI when answering assessments. This underscores the need for ethical and professional awareness in the use of technology, in line with the literature that emphasizes AI literacy and academic integrity in education (Chan, 2023). These data are supported by the informants' statements through the following interview excerpts.

P1 : *"It is very helpful, particularly in the preparation of assessments. When I prepare them independently, I often experience some confusion; however, through ChatGPT, I can gain a clearer understanding. Nevertheless, in the learning process, I still explain the material directly to the students. Therefore, I make adjustments so that students are not misled or overly reliant on searching for answers through ChatGPT."*

P2 : *"It is highly appropriate, as I input instructions and questions that are aligned with the content and principles of the Merdeka Curriculum."*

The statements from Informants P1 and P2 reinforce the quantitative findings in Table 3, which indicate the positive implications of using ChatGPT for improving the quality of lesson planning and its alignment with the Merdeka Curriculum (MC). P1 emphasized that ChatGPT plays a significant role in helping teachers develop assessments in a more targeted and understandable way, especially when teachers feel confused about doing it independently. This aligns with findings that 51% of respondents agreed and 18.4% strongly agreed that ChatGPT helps prepare assessments aligned with learning objectives. Meanwhile, P2's statement highlights the importance of curriculum alignment, where prompts tailored to the Merdeka Curriculum ensure that the resulting learning tools are relevant and contextual, which aligns with data showing that 69.4% of respondents agreed that ChatGPT helps tailor learning tools to the applicable curriculum. These statements confirm that ChatGPT contributes positively to structured, curriculum-relevant, and goal-oriented lesson planning. Meanwhile, the research findings indicate an improvement in both the quality of content and the learning process. This is evidenced by 61.2% of respondents agreeing that instructional materials became more varied after the use of AI ChatGPT. Furthermore, 69.4% of respondents agreed that learning activities became more creative with the assistance of ChatGPT. From a linguistic perspective, 63.3% of respondents agreed that ChatGPT improved the quality of instructional materials. In terms of assessment, although the level of agreement was slightly more varied, 51% of respondents agreed, and 28.6% expressed a neutral stance that ChatGPT assisted in developing assessments aligned with learning objectives. The following Table 4 presents these findings in detail.

Table 4. Indicators of Improving the Quality of Content and Learning Process

Statement	Rating Scale				
	1	2	3	4	5
Learning materials become more varied after using AI ChatGPT.	22,4%	61,2%	16,3%	0%	0%
Learning activities become more creative with the assistance of AI ChatGPT.	18,4%	69,4%	12,2%	0%	0%
AI ChatGPT helps improve the quality of language used in instructional materials.	18,4%	63,3%	18,4%	0%	0%
AI ChatGPT assists me in designing assessments that align with learning objectives.	18,4%	51%	28,6%	2%	0%

Rating scale: 1=; Strongly agree; 2= Agree; 3= Neutral; 4= Disagree; 5= Strongly Disagree

The research data in Table 4 show that ChatGPT not only impacts the development of materials and activities but also supports the integration of objectives, processes, and learning assessments. This is evidenced by the fact that 69.4% of respondents assessed that learning activities were more creative with the help of ChatGPT. Furthermore, the quality of language in



learning tools was significantly improved, with 63.3% of respondents agreeing. These findings reinforce the literature's arguments that generative AI can support more engaging, multimodal, and student-centered learning (Kasneci et al., 2023; Zawacki-Richter et al., 2019). Therefore, these data confirm that ChatGPT plays an important role in supporting education by improving the quality of content and learning processes. This assertion is supported by the statements of the following two participants:

- P1: *“In terms of creativity in developing instructional materials, I usually searched for sources through Google Chrome, but the results that appeared were limited and often did not align with our local context. As a result, the materials produced primarily reflected creativity. Before using ChatGPT, I was hesitant to modify the already-developed teaching modules. However, with the use of ChatGPT, the materials for each course within a semester are continuously revised and adapted.”*
- P3: *“The language produced by ChatGPT tends to follow the conventions of academic Indonesian, as it adjusts to the language variety used by its users.”*

Statements from Informants P1 and P3 emphasized that ChatGPT improved the quality of both the content and the learning process. P1's statement indicates that, before using ChatGPT, educators tended to rely on general search results that were not contextually relevant to local conditions, resulting in relatively limited creativity in material development. However, after using ChatGPT, teaching materials became more flexible, easier to modify, and could be continuously updated throughout the semester. Meanwhile, P3's statement affirms that ChatGPT is capable of producing scientific Indonesian language appropriate to user needs, thus supporting improvements in the linguistic quality of learning materials, as reflected by 63.3% of respondents who agreed with this statement. Nevertheless, academic integrity remains the main principle in using ChatGPT to uphold high academic standards (Nursalam et al., 2025; Yuliani et al., 2023). This aligns with the views of Tagare et al. (2025), who emphasized that the use of AI in education must be accompanied by strengthened pedagogical competence, professional ethics, and teachers' digital literacy. In this context, ChatGPT serves not only as a technical tool but also as a professional learning medium that encourages teachers to reflect on their practice. Therefore, ChatGPT has consistently been seen as enhancing the variety and creativity of materials and reinforcing linguistic quality, as well as integrating objectives, processes, and assessment into teachers' instructional materials.

Furthermore, the research data indicating improvements in the readiness, contextual relevance, and usability of instructional materials are evidenced by the fact that 63.3% of respondents agreed and 22.4% somewhat agreed that instructional materials became more contextual for students with the assistance of AI ChatGPT. In addition, 65.3% of respondents agreed that the use of ChatGPT enhanced the overall quality of Indonesian-language instructional materials. In terms of readiness for implementation, 59.2% of respondents and 30.6% somewhat agreed that instructional materials developed with the assistance of AI ChatGPT were more prepared for classroom use. For greater clarity, these findings are presented in Table 5.

Table 5. Indicators of Readiness, Contextuality, and Usability of Learning Tools

Statement	Rating Scale				
	1	2	3	4	5
Learning materials become more contextualized for students with the assistance of AI ChatGPT.	14,3%	63,3%	22,4%	0%	0%
The use of AI, such as ChatGPT, enhances the quality of Indonesian language learning materials.	12,2%	65,3%	20,4%	0%	0%
Learning materials developed with AI support, such as ChatGPT, are more classroom-ready and practically applicable.	10,2%	59,2%	30,6%	0%	0%

Rating scale: 1=; Strongly agree; 2= Agree; 3= Neutral; 4= Disagree; 5= Strongly Disagree

The data in Table 5 confirm that the implications of using ChatGPT are not only conceptual but also practical, as the resulting tools are considered more refined and applicable. The most prominent aspect was reflected in the score, with 65.3% of respondents stating that



ChatGPT could improve the quality of Indonesian language learning tools. Although concerns exist that using ChatGPT may diminish teachers' competence, it also has significant implications for supporting teachers in developing learning tools. The support for these implications is further emphasized through the following quote from a teacher:

- P1: *"Generally, prior to the availability of ChatGPT, the development of instructional materials tended to rely on teaching resources originating from Java. With the introduction of ChatGPT, however, we are now able to design learning materials that are more closely aligned with the specific needs of our schools."*
- P2: *"Previously, my teaching materials remained largely unchanged from year to year. Since using ChatGPT, I have become more consistent in developing varied instructional content for each chapter in Indonesian language learning."*

The results of the interviews with P1 and P2 reinforce the findings in [Table 5](#) by showing tangible changes in the practice of preparing learning materials after the use of ChatGPT. P1's statement indicates that, before ChatGPT, teachers tended to rely on learning materials sourced from the Javanese context, which were less reflective of local needs and school characteristics, such as those in Maluku. Meanwhile, the advent of ChatGPT has enabled teachers to create materials that are more contextual and relevant to students' needs. This is consistent with the finding that 63.3% of respondents rated the learning materials as more contextual, and 65.3% perceived the quality of Indonesian Language materials as having improved with the help of ChatGPT. Furthermore, P2's statement shows that ChatGPT encourages positive changes in teachers' habits, from using stagnant teaching materials to making them more dynamic and varied between chapters, reflecting an increase in the readiness and applicability of learning materials. Therefore, these informant statements affirm that ChatGPT functions not only as a conceptual aid but also has practical implications for improving the quality, contextual relevance, and preparedness of learning materials, while supporting teacher professionalism without replacing their pedagogical role.

This research finding strengthens the findings of previous studies by [Zainuddin et al. \(2024\)](#), which emphasize that the use of artificial intelligence (AI) in language education has attracted widespread attention and has the potential to transform teaching and learning practices. This aligns with the findings of [Chiu & Sanusi \(2024\)](#), who showed that utilizing ChatGPT not only improves student learning quality but is also an essential competency that teachers need to master. Moreover, this study is consistent with [Pan's \(2024\)](#) findings, which revealed ChatGPT's positive impact on increasing teaching efficiency, supporting more personalized learning, enriching teaching materials and strategies, and providing support for inclusive education and special needs. Therefore, the results of this study make a significant contribution to the development of research on the integration of AI in education, especially through the implementation of autonomous policy for the use of ChatGPT, while still positioning teachers as the main actors in the pedagogical process. The limitations of this study lie in the specific geographical and cultural context, namely Indonesian Language teachers at the high school level in Maluku Province; therefore, the findings cannot yet be broadly generalized to other areas with different social, cultural, and educational infrastructure characteristics. In addition, the research data are dominated by teacher perceptions through questionnaires and interviews; therefore, they do not yet fully represent the real impact of ChatGPT use on student learning outcomes or longitudinal changes in classroom learning practices. Therefore, future research should include a broader range of settings and use mixed-methods or longitudinal designs to examine the impact of ChatGPT use on student learning processes and outcomes on an ongoing basis, as well as to integrate analyses of teachers' AI literacy levels and school institutional policies. Moreover, further studies are needed to examine the ethical aspects, academic integrity, and models of AI usage policies that strike a balance between technological innovation and strengthening teacher professionalism in schools.

CONCLUSIONS AND SUGGESTIONS

This study shows that the utilization of AI ChatGPT by high school Indonesian language



teachers in Maluku makes a tangible contribution to improving the quality of learning materials from technical, pedagogical, and professional aspects. The main findings revealed that ChatGPT is an effective tool for enhancing teachers' efficiency in designing learning materials that are more systematic, varied, and aligned with the Merdeka Curriculum. In addition to accelerating the planning process, ChatGPT also plays an important role in developing, adapting, and enriching learning content, particularly for literary and non-literary texts and for critical reading instruction, while still placing teachers as the primary controllers through the processes of review, adaptation, and contextualization. The implications of this study confirm that integrating ChatGPT improves the quality of content, processes, and the readiness of learning materials for classroom use, while also encouraging more creative, contextual, and responsive teaching practices tailored to students' needs. At the same time, this study also demonstrates teachers' ethical and reflective awareness in using AI, especially to maintain academic integrity and prevent excessive technological dependence. Thus, ChatGPT serves as a catalyst for pedagogical innovation rather than a replacement for teachers' professional competence. The main contribution of this study lies in providing empirical contextual evidence on the integration of generative AI in language education in island and non-metropolitan regions, which have been relatively under-researched. Looking ahead, further research should focus on longitudinal and cross-regional studies to assess the impact of ChatGPT usage on student learning outcomes, as well as explore sustainable policy models and AI literacy for teachers.

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