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Integrating Artificial Intelligence (AI) in Language Teaching: Effectiveness, Challenges, and Strategies

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Abstract. Integrating artificial intelligence (AI) technologies into various domains of education has emerged as a promising avenue for enhancing teaching and learning experiences. Language teaching, in particular, benefits significantly from AI's capabilities, offering unprecedented opportunities to support educators in delivering more effective and personalized instruction to diverse student populations. The research employed a mixed-method approach using a quant-qual research design. to investigate AI's integration into language teaching. Results from n=100 language teachers indicate that educators perceive AI to be effective across multiple aspects. Different AI systems have varying levels of perceived effectiveness but are nevertheless welcomed positively. From the profile of teachers using AI, to the kinds of AI used and functions, there are varying distinctions as well as the acceptance of AI integration in language instruction. The fact that AI is being widely used to improve language instruction through interactive simulations, adaptive learning, and individualized feedback is evidence of this. Despite challenges such as technological constraints and pedagogical alignment, educators have reported successes in improving student engagement, proficiency, and autonomy through the strategic use of AI. These insights underscore the importance of continued exploration and implementation of innovative strategies to harness the full potential of AI in language education.

Keywords: artificial intelligence; challenges; effectiveness; language teaching; teaching strategies

1. Introduction

In recent years, integrating AI technologies into various domains of education has emerged as a promising avenue for enhancing teaching and learning experiences (Bulger & Mayer-Schönberger, 2018). Language teaching, in particular, benefits significantly from AI's capabilities, offering unprecedented opportunities to support educators in delivering more effective and personalized instruction to diverse student populations (Mehlhorn et al., 2020). However, while AI

technologies hold immense potential in language education, understanding how teachers utilize these tools in their teaching practices and how they can maximize their effectiveness is crucial for realizing their full benefits. AI refers to the simulation of human intelligence processes by machines, especially computer systems, to perform tasks that typically require human intelligence. In education, AI is increasingly utilized to enhance learning experiences and outcomes. Machine Learning (ML), a subset of AI, involves algorithms that enable computers to improve their performance on tasks over time through experience, which can be applied to personalize learning and provide adaptive feedback to learners. Natural Language Processing (NLP), another crucial AI component, focuses on the interaction between computers and human language. This allows for the development of intelligent tutoring systems, automated grading, and language Translation Tools that facilitate multilingual education. Understanding these AI concepts is fundamental to appreciating their transformative potential in language teaching and broader educational practices.

The rationale for this study stems from several key considerations. Firstly, with advancements in NLP, machine learning, and other AI techniques, many AI-powered tools and applications have become available to language educators (Levy & Windmann, 2020). These tools range from automated language assessment systems to interactive language learning platforms and AI-driven Conversational Agents. Secondly, AI technologies offer unique capabilities to address language teachers' challenges, such as catering for individual learning needs, providing personalized feedback, and facilitating immersive language practice (Baker et al., 2019). By harnessing AI's power, teachers can enhance language instruction's efficiency, effectiveness, and inclusivity.

However, despite the potential benefits, the adoption of AI in language teaching varies among educators, influenced by factors such as familiarity with technology, pedagogical beliefs, institutional support, and access to resources (Chen & Hsieh, 2020). Understanding the factors influencing teachers' use of AI tools is essential for identifying barriers and facilitators to adoption. Additionally, to fully leverage the potential of AI in language teaching, it is crucial to explore how teachers can effectively integrate AI tools into their instructional practices (Reimers & Gurevych, 2020). This involves selecting appropriate AI technologies, developing pedagogical strategies, adapting curriculum design, and providing professional development opportunities to support teachers in effectively utilizing AI.

Given these considerations, this paper addresses the following research questions: What AI technologies are currently used by English language teachers in their teaching practices? What specific tasks and activities do teachers perform with the assistance of AI tools in language teaching? What challenges do language teachers encounter in integrating AI into their teaching? How can these challenges encountered by teachers be addressed? What strategies can teachers employ to maximize the effectiveness of AI tools in language teaching and optimize student learning outcomes?

By investigating these questions, this study aims to contribute valuable insights to the ongoing discourse on integrating AI in language teaching and provide practical recommendations for educators, curriculum developers, and educational policymakers seeking to harness AI's potential to enhance language learning experiences.

2. Review of Related Literature

Integrating AI technologies in language teaching has garnered significant attention in educational research. Scholars have explored various AI technologies, such as NLP, machine learning, and deep learning, highlighting their potential to enhance language learning experiences (Levy & Windmann, 2020). These technologies have led to the development of AI-driven conversational agents, automated feedback systems, adaptive learning platforms, and language generation models, offering new avenues for supporting language learners (Mehlhorn et al., 2020).

Research has demonstrated the effectiveness of AI in improving different aspects of language learning. For instance, studies have shown that AI-driven feedback systems can provide timely and personalized student feedback, improving writing skills (Reimers & Gurevych, 2020). Furthermore, AI technologies have enhanced vocabulary acquisition, grammar proficiency, speaking and listening skills, and overall language proficiency (Baker et al., 2019). These findings underscore the potential of AI to address the diverse learning needs of language learners.

However, integrating AI into language teaching has its challenges. Educators face various obstacles, including technology infrastructure limitations, resource access, teacher training needs, data privacy concerns, and pedagogical alignment with AI-driven tools (Chen & Hsieh, 2020). Understanding and addressing these challenges are essential for ensuring the successful implementation of AI in language education.

Scholars have proposed several strategies to maximize the utilization of AI in language teaching. These include comprehensive teacher training on AI technologies, fostering collaboration between educators and technologists, designing user-friendly AI tools, seamless integration of AI into existing instructional practices, and promoting pedagogical approaches that emphasize learner engagement and autonomy (Bulger & Mayer-Schönberger, 2018; Mehlhorn et al., 2020). Additionally, case studies and best practices from institutions and educators who have successfully integrated AI into language teaching offer valuable insights. These studies highlight innovative approaches, lessons learned, and practical recommendations for optimizing AI utilization in language education (Levy & Windmann, 2020).

In synthesizing and critically analyzing the existing literature and studies, a nuanced picture emerges, showcasing both the synergies and contradictions in the research. While many studies, such as those by Reimers and Gurevych (2020) and Baker et al. (2019), provide strong evidence supporting the efficacy of AI-

driven tools in enhancing various language skills, other research presents a more cautious view. For example, Chen & Hsieh (2020) point out significant challenges related to infrastructure and training that can hinder successful AI integration, suggesting that without addressing these foundational issues, the benefits of AI may not be fully realized.

Moreover, there are contrasting findings regarding the impact of AI on student engagement and teacher roles. Some studies argue that AI tools can lead to more personalized and engaging learning experiences (Levy & Windmann, 2020), while others warn of the risk of over-reliance on technology potentially diminishing the human element in teaching (Bulger & Mayer-Schönberger, 2018). These contradictions highlight the need for a balanced approach, integrating AI in ways that complement rather than replace traditional teaching methods.

Furthermore, gaps in the literature reveal areas needing further exploration, such as long-term impacts of AI on language proficiency and the scalability of AI-driven solutions in diverse educational contexts. By identifying and analyzing these gaps and conflicting findings, researchers can develop a comprehensive understanding that informs the design and implementation of future studies, advancing the field of AI in language education.

3. Methodology

The research employs a mixed-method approach to comprehensively investigate AI's integration into language teaching. This approach combines quantitative and qualitative methods to gather and analyze data from multiple sources.

Quantitative Component:
The quantitative component involved the administration of a survey questionnaire to 100 language teachers in central Visayas. The survey aimed to collect data on the types of AI technologies used, specific tasks performed with AI assistance, perceived effectiveness, challenges faced, and strategies employed for maximizing AI utilization in English language classes. Survey responses were analyzed using descriptive statistics to identify trends, patterns, and relationships between variables.

Qualitative Component:
In the qualitative component, in-depth interviews and focus group discussions were conducted with language teachers to gain deeper insights into their experiences, perceptions, and practices related to integrating AI into teaching.

Participant Selection:
Participants for the qualitative component were selected using purposive sampling to ensure a diverse representation of teachers from different schools, levels of experience, and familiarity with AI technologies. An initial pool of participants was identified from survey respondents who indicated willingness to participate in further qualitative research. From this pool, 20 teachers were selected to participate in in-depth interviews, and an additional 20 were selected for focus group discussions, ensuring a balance of perspectives.

Research Tools and Interview Protocols:
The tools used were validated for its reliability. The in-depth interviews followed a semi-structured format, allowing for flexibility while ensuring that key topics were covered. An interview guide is developed, including open-ended questions about participants' experiences with AI in language teaching, the effectiveness of AI tools, challenges encountered, and strategies for successful integration. This guide has been validated by three experts in language and technology use in teaching and learning. Each interview lasts approximately 45-60 minutes and is conducted either face-to-face or via video conferencing, depending on participant availability and preferences.

Focus Group Discussions:
Focus group discussions are facilitated with groups of 5-8 teachers to encourage interaction and the sharing of diverse perspectives. A facilitator guides the discussion using a focus group protocol that includes questions similar to those in the in-depth interviews, promoting dialogue and the exploration of collective experiences. Each focus group session lasts about 90 minutes and is conducted in a neutral setting conducive to open discussion.

Data Recording and Analysis:
All interviews and focus group discussions were audio-recorded with participants' consent and transcribed verbatim. Qualitative data was analyzed thematically, using a coding process to identify recurring themes, insights, and perspectives. Initially, open coding was applied to segment the data into meaningful units. This was followed by axial coding to establish connections between codes and selective coding to identify core themes that answered the research questions. Data triangulation was used to integrate and interpret findings from both quantitative and qualitative components, providing a comprehensive understanding of AI integration in language teaching.

Ethical Considerations:
Ethical considerations are paramount in this study to ensure the rights and well-being of participants were protected throughout the research process. Informed consent was obtained from all participants, with clear information provided about the study's purpose, procedures, potential risks, and benefits. Participants were assured that their participation was voluntary and that they could withdraw from the study at any time without any consequences. Confidentiality was maintained by anonymizing all data, and personal identifiers were removed from transcripts and survey responses. Data protection measures were implemented to secure all collected data, including encrypted storage and restricted access to authorized personnel only. Additionally, ethical approval for the study was obtained from the ethics review committee, ensuring that the research adhered.s to established ethical guidelines and standards.

This mixed-methods approach enables a nuanced exploration of the integration of AI in language teaching, offering insights into both the breadth and depth of teachers' experiences and practices. By detailing the procedures for participant

selection, interview protocols, and data analysis, the study ensures rigor and transparency in the research process.

4. Results and Discussion

4.1 Language Teachers' Profile and AI Use

The table reflects language instructors' profiles and how they use AI. It shows different categories, including role, years of experience, grade level taught, kind of school, and highest degree of education. The figures show the percentage of instructors in each category who use AI in their lesson plans. The table also includes p-values and chi-square values (χ^2) to show the statistical significance of the categories' differences, but none are significant at α=.05.

Table 1: Language teachers' profile and their AI use

Profile	Category	Percentage of AI Use	χ^2-value	p-value
Role	Language Teacher	95%	0.458 ^{ns}	.499
	Language Department Head	100%		
Years of Experience	1-3 years	100%	5.710 ^{ns}	.222
	4-5 years	100%		
	6-10 years	89%		
	11-15 years	100%		
	More than 15 years	90%		
Grade Level Handled	Grade School	87%	4.360 ^{ns}	.113
	Junior and Senior HS	97%		
	Higher Education	100%		
Type of School	Public	95%	0.053 ^{ns}	.818
	Private	96%		
Highest Educational Attainment	With master's units	93%	2.260 ^{ns}	.521
	With master's degree	100%		
	With doctorate units	100%		
	With doctorate degree	100%		

^{ns} Not significant at α=.05

Language teachers and department heads exhibit nearly universal AI adoption at 95% and 100%, respectively. This high percentage indicates a clear trend toward integrating AI in various roles, indicating that teachers and heads know the advantages of AI tools in language instruction. There is no discernible difference in the use of AI between different roles, as indicated by the p-value of .499 and the χ^2-value of 0.458, highlighting the widespread adoption and use of AI independent of positional hierarchy.

Teachers reporting 1-3, 4-5, and 11-15 years of experience all reported using AI 100% of the time. The usage rates of those with over 15 years of experience and those with 6–10 years of experience were slightly lower, at 90% and 89%, respectively. A p-value of .222 and a χ^2-value of 5.710 indicated no discernible variation in the use of AI across expertise levels. The consistent use of AI suggested that educators with varying expertise incorporated AI into their

lessons, indicating a general recognition of AI's beneficial effects on education across all experience levels.

There was a variance in the amount of AI used by grade-level teachers (87%), junior and senior high school teachers (97%), and higher education instructors (100%). A tendency showed that higher grade levels correlated with more AI usage, but there was no significant difference, as indicated by the p-value of 113 and the χ^2-value of 4.360. This could be because AI tools for more advanced learners are more complex and available or because higher education environments offer more autonomy and resource allocation.

Teachers in public schools reported using AI 95% of the time, whereas teachers at private schools reported using it 96% of the time. There is no discernible difference between the p-value of .818 and the χ^2-value of 0.053, suggesting that AI use was the same in public and private schools. This equivalence implied that the type of school might not significantly impact the adoption of AI, presumably as a result of equivalent mandates for education and the availability of technology in the public and private sectors.

Teachers with master's degrees, doctoral units, and doctorate degrees indicated 100% AI use, while those with only master's units report 93%. The highest educational attainment displayed a gradient in this regard. A p-value of .521 and a χ^2-value of 2.260 showed no discernible variation in the use of AI across educational attainment levels. The data suggested that a more significant propensity to utilize AI may correlate with better educational degrees, maybe due to increased exposure to cutting-edge research and instructional technology in school.

Overall, few notable distinctions existed between teacher profiles regarding the acceptance of AI integration in language instruction. The fact that AI was being widely used to improve language instruction through interactive simulations, adaptive learning, and individualized feedback was evidence of this. The small differences seen in several categories, especially in lower grade levels and across teachers with different years of experience, may shed light on particular areas where AI integration should be further promoted or researched. The widespread adoption of AI across several profiles highlighted a notable trend toward technology advancement in education, opening the door for creative teaching strategies and enhanced student outcomes.

4.2 AI Technologies Used

The table presents a comprehensive analysis of the proportion of AI technologies utilized by language instructors in several demographic profiles. These profiles include roles, years of experience, grade levels taught, school type, and highest education degree. This study examines the five AI technologies: Automated Feedback Systems, adaptive learning platforms, Language Generation Models, Conversational Agents/chatbots, and AI-powered Translation Tools.

Table 2: Percentage of AI technologies used by demographic profile

Profile	Category	Automated Feedback Systems	Adaptive Learning Platforms	Language Generation Models	Conversational Agents/ Chatbots	AI-powered Translation Tools
Role	Language Teacher	31%	31%	53%	20%	37%
	Language Department Head	100%	43%	29%	57%	57%
Years of Experience	1-3 years	43%	29%	46%	21%	39%
	4-5 years	25%	25%	100%	25%	44%
	6-10 years	32%	43%	43%	25%	32%
	11-15 years	30%	40%	40%	0%	40%
	More than 15 years	44%	22%	33%	33%	39%
Grade Level Handled	Grade School	27%	36%	41%	18%	55%
	Junior and Senior HS	35%	29%	45%	18%	26%
	Higher Education	50%	38%	88%	50%	63%
Type of School	Public	37%	30%	46%	24%	31%
	Private	35%	35%	57%	22%	46%
Highest Educational Attainment	With master's units	30%	26%	48%	18%	37%
	With master's degree	33%	33%	33%	0%	33%
	With doctorate units	78%	100%	67%	67%	44%
	With doctorate degree	42%	17%	67%	33%	42%

Language instructors mostly employ Language Generation Models (53%) when analyzing their function as educators. AI-powered Translation Tools (37%) and Automated Feedback Systems (31%) were the most popular tools. The usage patterns of Language Department Heads, on the other hand, vary. They utilize Conversational Agents/Chatbots (57%) and Automated Feedback Systems (100%) at high adoption rates, but they used Language Generation Models (29%) at significantly lower rates. This discrepancy suggests that department heads emphasize feedback and conversational tools to oversee and improve curriculum delivery and student interactions. In contrast, language teachers primarily depended on generative AI for content generation and instructional support.

Experience across many years demonstrated a varied uptake of AI technologies. Automated Feedback Systems (43%) and Language Generation Models (46%)

were often used by teachers with 1-3 years of expertise. As they honed their teaching techniques, those with 4-5 years of expertise, on the other hand, used Language Generation Models 100% of the time, suggesting a significant preference for AI-driven content creation. Teachers with over 15 years of experience used AI technologies in a balanced way, although they use Automated Feedback Systems (44%) and conversational agents/chatbots (33%) more frequently than other tools. These patterns impliedy that experienced educators employed AI tools to broaden their teaching strategies, while novice educators might depend on AI to support their developing teaching methods.

The kinds of AI technologies employed are strongly influenced by the grade level handled. Higher education teachers used AI tools the most in all categories, especially in Language Generation Models (88%) and Automated Feedback Systems (50%). This is because teaching in higher education is more complex and requires the use of advanced AI technologies, which these tools may help with. In contrast, grade schoolteachers emphasize basic language skills and tailored learning routes; they use AI-powered Translation Tools primarily (55%) and moderately (41%) and (36%), respectively, when using Language Generation Models and Adaptive Learning Platforms. Teachers in junior and senior high schools employ Automated Feedback Systems (35%) and Language Generation Models (45%), although they rely less on Conversational Agents/chatbots (18%). This pattern emphasizes how AI tools should be specifically applied to match the demands and skills of learners at various educational levels.

This type of school offered a complex perspective on the uptake of AI technologies. Instructors in public schools used AI-powered Translation Tools (46%) and Automated Feedback Systems (37%) at a more balanced rate compared to instructors in private schools, who used these tools more frequently (46%) and Language Generation Models (57%) more frequently. This discrepancy might result from disparities between public and private institutions' financial distribution, technological infrastructure, and curriculum priorities; private schools might have greater access to cutting-edge AI technologies.

The highest educational attainment revealed significant variations in AI utilization. Doctorate-holding teachers had a high adoption rate for all categories, especially for Adaptive Learning Platforms (100%) and Language Generation Models (67%). This suggests that they greatly desired to use advanced AI technologies to improve the effectiveness of their instruction. AI tools were used more often by those with master's degrees or units who preferred Automated Feedback Systems and Language Generation Models. According to this, a positive correlation existed between having more education and a stronger inclination to use advanced AI technologies. This is probably because people with more education have more experience and confidence using these tools for teaching.

Overall, there were notable differences in how AI technologies were incorporated into language instruction depending on the demographic profile being taught, indicating unique application patterns and preferences. The realization that AI could improve learning outcomes through conversational practice,

individualized feedback, adaptive learning, content creation, and translation support was reflected in this widespread usage. These results highlighted the necessity for focused assistance and training to maximize the integration of AI, ensuring that teachers across contexts and levels could successfully utilize these tools to enhance their instruction and learners' learning experiences.

4.3 Perceived Effectiveness of AI Technologies Used

The table lists the perceived effectiveness of different AI technologies used in language instruction based on various evaluation criteria. Each technology is given a level of perceived effectiveness on a scale of 1.00 (not effective) to 5.00 (very effective).

Table 3: Perceived effectiveness of AI technologies used

Aspect	Automated Feedback Systems	Adaptive Learning Platforms	Language Generation Models	Conversational Agents/ Chatbots	AI-powered Translation Tools
Enhancement of Student Engagement	3.83 (0.66) Effective	3.84 (0.45) Effective	3.73 (0.85) Effective	4.09 (0.52) Effective	4.11 (0.69) Effective
Improvement in Language Proficiency	3.64 (0.90) Effective	3.53 (0.51) Effective	3.49 (0.90) Effective	3.48 (0.79) Effective	3.89 (0.65) Effective
Personalized Learning Experiences	4.06 (1.01) Effective	3.91 (0.78) Effective	4.04 (0.80) Effective	4.17 (0.72) Effective	4.11 (0.76) Effective
Efficiency in Teaching and Learning	4.08 (0.81) Effective	4.22 (0.49) Very effective	4.24 (0.76) Very effective	4.04 (0.77) Effective	4.42 (0.55) Very effective
Enhancement of Teaching Resources	4.42 (0.84) Very effective	4.53 (0.51) Very effective	4.51 (0.58) Very effective	4.57 (0.51) Very effective	4.66 (0.48) Very effective
Facilitation of Assessment and Feedback	4.19 (0.82) Effective	4.19 (0.54) Effective	4.06 (0.79)	4.26 (0.62) Very effective	4.26 (0.76) Very effective
Integration with Curriculum Goals	4.22 (0.64) Very effective	4.03 (0.60) Effective	4.25 (0.60) Very effective	4.04 (0.71) Effective	4.18 (0.65) Effective
Encouragement of Autonomous Learning	3.47 (1.18) Effective	3.44 (1.01) Effective	3.41 (1.19) Effective	3.26 (1.14) Moderately effective	3.76 (0.94) Effective
Adaptability to Diverse Learning Needs	4.08 (0.91) Effective	4.03 (0.70) Effective	4.10 (0.86) Effective	4.39 (0.58) Very effective	4.24 (0.79) Very effective
Preparation of Real-world Language Use	4.00 (0.93) Effective	3.78 (0.75) Effective	3.96 (0.94) Effective	3.91 (0.79) Effective	4.18 (0.80) Effective

Aspect	Automated Feedback Systems	Adaptive Learning Platforms	Language Generation Models	Conversational Agents/ Chatbots	AI-powered Translation Tools
Overall Perceived Effectiveness	*4.00 (0.60) Effective*	*3.95 (0.40) Effective*	*3.98 (0.59) Effective*	*4.02 (0.47) Effective*	*4.18 (0.54) Effective*

Legend: 1.00-1.80 (Not effective), 1.81-2.60 (Fairly effective), 2.61-3.40 (Moderately effective), 3.41-4.20 (Effective), 4.21-5.00 (Very effective)

All AI technologies were judged effective in raising student engagement, with the highest ratings going to AI-powered Conversational Agents/Chatbots (μ=4.09) and Translation Tools (μ=4.11). This showed that these technologies, perhaps because of their interactive and real-time feedback characteristics, were especially effective at stimulating learners' attention and encouraging participation. After all, AI has been consistently shown to increase student learning motivation, self-efficacy, satisfaction, and performance (Chiu, Hwang, Hsia, & Shyu, 2022). AI-powered Translation Tools (=3.89) again improved language competency, followed by Automated Feedback Systems (μ=3.64). These ratings suggested that Feedback Systems and Translation Tools were especially helpful in helping learners improve their language proficiency because they could offer real-time corrections and contextual translations. This was one of the many ways where AI could help improve a learners' language skills as it gave real-time feedback that rivalled even those of the experts (Rusmiyanto, Huriati, Fitriani, Tyas, Rofi'i, & Sari, 2023). Teachers who used AI specifically geared toward Translation Tools had learners who were significantly better at pronunciation, grammar, and overall fluency (Li et al., 2020).

Another crucial area where all technologies demonstrated effectiveness was Personalized Learning Experiences, with Conversational Agents/chatbots (μ=4.17) and AI-powered Translation Tools (μ=4.11) receiving the highest ratings. This emphasized how AI may create learning paths customized to each student's needs and provided individualized instruction that accommodated varying learning styles and speeds. AI was specifically suited for this job since it could easily identify weaknesses in student's writings and use it as basis to create a plan for them to improve (Bhutoria, 2022). This strengthens the fact that AI might significantly reduce teacher workload in giving feedback to learners (Pratama, Sampelolo, & Lura, 2023). AI-powered Language Generation Models (μ=4.24) and Translation Tools (μ=4.42) were recognized as very effective in terms of efficiency in teaching and learning. They demonstrated their usefulness in streamlining instructional procedures and decreasing teachers' time on repetitive tasks. By managing workload more skillfully, these tools allow teachers to concentrate on higher-order instructional tasks.

All evaluations of the improvement of instructional materials were highly favorable, with AI-driven chatbots and Translation Tools scoring μ=4.66 and μ=4.57, respectively, as highly efficient. With their wide range of resources that are simple to incorporate into lesson plans, these technologies expand the library of instructional materials that are now available. Another area where AI technologies excelled was facilitating assessment and feedback. AI-powered

Translation Tools (μ=4.26) and Conversational Agents/chatbots (μ=4.26) were highly successful. These tools made it easier to administer tests effectively and offer thorough feedback, essential for tracking and improving student performance. AI helped in enhancing student's test taking efficiency as it allowed them to cover more material in less time (Chen, Chen, & Lin, 2020). Furthermore, AI also helped teachers in creating tests as these applications could easily sift through huge chunks of material to create draft questions which the teacher might use as basis for assessment (Clark, 2023). For Automated Feedback Systems (μ=4.22) and Language Generation Models (μ=4.25), integration with curricular goals was evaluated mainly as highly effective, indicating that these AI technologies corresponded well with educational objectives and aided in achieving desired learning results.

Though Conversational Agents/Chatbots (μ=3.26) are only somewhat effective, the technologies were typically rated effective when promoting autonomous learning. This implies that although AI technologies greatly facilitated self-directed learning, these chatbots may not be as effective at encouraging independent study as other AI uses. One plausible reason for this may be dependence. Learners have the tendency to become dependent on an application if they consistently use it for their classwork (González-Calatayud, Prendes-Espinosa, & Roig-Vila, 2021). Hence, teachers need to monitor closely how their learners are using AI in their independent learning activities (Fitria, 2021). High effectiveness ratings were seen for Adaptability to various learning needs; Conversational Agents/chatbots (μ=4.39) and AI-powered Translation Tools (μ=4.24) led the way. With the help of these technologies, education may become more inclusive and accessible, meeting a more comprehensive range of learning requirements and styles. Thus, with proper guidance, teachers can harness the full potential of AI in accommodating various learning styles without sacrificing the creativity and originality of the learners (Hooda et al., 2022).

All technologies scored highly for preparing users for language use in the real world; however, the AI-powered Translation Tools score (μ=4.18) stood out. These resources were especially helpful in giving children real-world language proficiency that they could use in everyday situations. The consensus was that AI technologies effectively taught languages; AI-powered Translation Tools (μ=4.18) had the highest overall rating. This perceived effectiveness demonstrates AI's advantages and broad applicability in improving language instruction. This has been shown in a study by Huang et al. (2023), which states that AI aids learners in learning how to write, read, speak, and listen. AI-powered Translation Tools allow them to optimize their translation skills and allow them to recognize common errors that trip learners up (Sharadgah & Sadi, 2022).

According to the findings, while all AI technologies benefited language learning, some were more successful than others in particular domains. High ratings for AI-powered Translation Tools was a constant, highlighting their adaptability and influence in various educational contexts. Similarly, Language Generation Models and Conversational Agents/chatbots worked particularly well in specific domains, such as resource augmentation and tailored learning. These results

highlighted the importance of carefully combining various AI technologies to maximize their advantages and meet specific educational demands. Customizing AI integration to the particular needs of every educational situation can maximize advantages and enhance overall teaching and learning experiences. With the help of effective and flexible teaching strategies, an all-encompassing approach to AI integration in language education may ultimately result in more competent, autonomous, and engaged learners.

4.4 Challenges Faced in AI Integration

Examining the use of AI in language instruction reveals some difficulties language instructors face. These obstacles include restrictions on technology infrastructure, resource accessibility, the requirement for teacher preparation, worries about data security and privacy, and pedagogical alignment with AI-driven technologies.

Theme 1: Restrictions on Technology Infrastructure

Limitations in technology infrastructure present a significant challenge. The technological infrastructure required to facilitate the integration of AI tools in language instruction needs to be improved in many schools and other educational institutions. This includes insufficient access to gadgets for teachers and learners, obsolete technology, and poor internet connectivity. For example, one teacher mentioned:

> "*Our school's internet is so slow that we cannot reliably use online AI tools during lessons.*"

Another shared:

> "*We have only a few computers in the classroom, making it hard to incorporate AI activities effectively.*"

A third participant stated:

> "*Without modern devices, the AI applications we try to use often crash or run very slowly, disrupting the learning process.*"

The implications of this challenge suggest that the potential benefits of AI in language education can only be fully realized with significant investment in technological infrastructure. This has been a common challenge of educational institutions worldwide, most especially those in developing countries (Mhlanga, 2021). The education sector lacks proper funding that will allow them to integrate AI in their classrooms. In the case of the Philippines, poor internet connection remains one of the biggest concerns as not all parts of the country has strong and reliable bandwidth (Cajurao et al., 2023; Paterno, 2023). Hence, upgrading technology is a top priority for schools to foster an atmosphere that supports the efficient application of AI tools.

Theme 2: Resource Accessibility

Another significant issue is access to resources, such as technical assistance and AI technologies. It can be challenging for educators to access the AI technologies they need and the technical assistance they need to integrate them into their lesson plans. An instructor said:

> *"We do not have access to the latest AI tools, and the ones we have are often outdated or limited in functionality."*

Another participant noted:

> *"There is little to no technical support available when things go wrong, leaving us to troubleshoot issues independently."*

A third participant noted:

> *"Budget constraints mean we cannot afford many advanced AI tools that could benefit our learners."*

This challenge indicates better funding and resource allocation to ensure teachers can access the newest AI tools and adequate technical support. Teachers can find it challenging to incorporate AI into their lessons without these tools successfully. This is because most, if not all AI tools are paid services. An individual or institution needs to pay exorbitant fees to make use of its services, which serves as one of the primary challenges of educational institutions (Schiff, 2020). Governments need to focus their funding on education, most especially in AI development as the landscape of education changes rapidly before our very eyes (Bates et al., 2020).

Theme 3: Requirement for Teacher Preparation

Another main area for improvement is the requirement for teacher training. Many educators must be adequately trained to use AI tools in the classroom. This entails knowing how to solve typical technological problems and including AI in their educational preparations. An instructor commented:

> *"We have not received formal training on using AI tools, so it is a lot of trial and error."*

Another teacher said:

> *"Even when we have the tools, we cannot use them to their full potential without proper training."*

A third teacher added:

> *"Professional development opportunities focusing on AI are rare, leaving many of us unprepared."*

The availability of AI tools does not guarantee its use in the classroom. Teachers must also be trained on how to use this medium since it has to be appropriated to education (Kuijvenhoven, 2024). This has been one of the great challenges of teachers worldwide as inappropriate use of AI in the classroom may end up hurting the learners more (Ahmad et al., 2021). Issues such as AI dependence, plagiarism, and false information are only some of the many things that could go wrong when the teacher does not know how to properly guide the learners in using AI (Luan et al., 2020). The implications are apparent: There is a critical need for comprehensive professional development programs that give teachers the abilities and knowledge to use AI tools effectively. Such instruction must be continuous and involve real-world, practical applications. The learning

environment through guided instruction where there is teacher interaction is crucial in the teaching-learning scenario (Mananay, 2018)

Theme 4: Worries About Data Privacy and Security

Security and privacy issues with data also pose a challenge. Large volumes of student data are gathered and processed as part of the usage of AI in education, which raises questions regarding data security and privacy. Schools and teachers are responsible for securing student data and utilizing it ethically. A teacher said:

> *"I am concerned about how student data is used and whether it is secure."*

One participant noted:

> *"Parents have expressed concerns about the privacy of their children's data when using AI tools."*

Another participant shared:

> *"We need clearer guidelines and assurances about data protection when implementing these technologies."*

Data privacy has become a major concern because in order to make use of AI in its full potential, one must use confidential information about learners such as their learning profile which includes their test scores, common behaviors, family history and many more (Murdoch, 2021). Big capitalist corporations behind these tools are now given valuable information which could potentially put many learners and teachers at risk (Timan & Mann, 2021). Furthermore, the risk is doubled as these tools are multinational in nature. That is, they come from sources outside one's country and the information inputted in an AI tool could end up in the wrong hands (Alonso & Siracuse, 2023). As such, this challenge highlights the significance of creating strong data privacy policies and ensuring AI tools adhere to these standards. Additionally, schools need to be open and honest with parents and learners about how their data is handled and safeguarded.

Theme 5: Pedagogical Alignment with AI-driven Pedagogies

The last problem is pedagogical alignment with AI-driven tools. It might be challenging to incorporate AI tools into the curriculum in a way that improves learning outcomes and is in line with pedagogical objectives. Instructors must make sure AI tools are successfully incorporated into their lesson plans rather than being an optional extra. One teacher said*:*

> *"It is difficult to find AI tools that fit seamlessly into our existing curriculum."*

A third participant said:

> *"We need to be careful that AI tools enhance, rather than detract from, the learning experience."*

Another participant said:

> *"Some AI tools do not align well with our pedagogical goals, making them less effective."*

Not all AI tools fit every topic and activity in the classroom as some classes require learners to unleash their creativity while others require the assistance of AI (Tatar et al., 2024). Case in point would be in creative writing, where learners need to make use of their own words as much as possible to make the most of their learning experience (Chiu et al., 2021). In cases like this, the use of AI should be kept to a minimum (Chiu & Chai, 2020). This challenge emphasizes the need for careful selection and integration of AI tools to ensure they support and enhance pedagogical objectives. To select resources that match their pedagogical approaches and curriculum objectives, educators must be actively involved in the selection process.

It is clear that even though AI has the potential to revolutionize language instruction, several important issues still need to be resolved. Essential actions include addressing the constraints of the technology infrastructure, enhancing resource accessibility, offering thorough teacher preparation, ensuring data security and privacy, and coordinating AI technologies with educational objectives. By addressing these issues, academic institutions can establish a setting that facilitates the successful integration of AI into language instruction, thereby improving student learning and teaching.

4.5 Strategies to Optimize AI Integration in Language Teaching

Examining the use of AI in language instruction indicates many areas in which language instructors can significantly benefit from AI. These themes include personalized feedback on student work, interactive language practice simulations, adaptive learning support, writing prompt generation, and language evaluation and performance tracking.

Theme 1: Personalized Feedback on Student Work

One recurring theme in student assignments and evaluations is the provision of personalized feedback. Language teachers use AI to provide personalized, in-depth feedback that considers each student's demands. Grammarly and Turnitin are two examples of AI technologies that help teachers find grammar mistakes, stylistic problems, and possible plagiarism. For instance, one teacher noted:

> *"AI helps me pinpoint specific areas where a student struggles, like verb tense consistency, which I can then focus on in my feedback."*

Another teacher shared:

> *"Using AI, I can quickly provide personalized comments on each student's essay, which would be time-consuming if done manually."*

A third teacher said:

> *"AI's ability to detect and explain errors means learners receive instant feedback, which enhances their learning process."*

AI generates almost instantaneous feedback on huge chunks of text at breathtaking pace (Chen et al., 2022). Furthermore, its ability to generate personalized feedback allows learners to identify their weak points to improve their writing (Luo & Cheng, 2020). In this context, the teacher is not required to review everything the student produces, but instead acts as a facilitator,

monitoring the AI's feedback for errors and potential misinformation (Crompton & Burke, 2023). This helps teachers provide more accurate and faster feedback. The implications of this theme suggest that AI can significantly reduce the workload of language teachers while simultaneously improving the quality of feedback given to learners, fostering a more personalized and efficient learning environment.

Theme 2: Interactive Language Practice Simulations

Another key element is developing interactive role-plays and simulations for language practice. AI-driven simulations may make language learning more immersive and exciting than conventional techniques. These simulations can imitate circumstances where learners can hone their conversational abilities in a safe yet stimulating setting. One teacher noted:

> *"AI simulations allow learners to practice speaking in various scenarios, like ordering food at a restaurant, which builds their confidence."*

Another highlighted:

> *"Interactive role-plays with AI characters help learners use new vocabulary in context, making learning more practical."*

A third participant noted:

> *"These simulations adapt to the student's proficiency level, providing appropriate challenges and support."*

The implications of this theme highlight the potential of AI to create realistic and adaptable learning experiences that improve learners' practical language skills and cultural understanding. This correlates well with the study of Chen et al. (2022) which states that AI Chatbots are helpful in creating an engaging and responsive classroom environment. These chatbots can serve as conversational learning tools where they can practice the language skills they learned in the classroom.

Theme 3: Adaptive Learning Support

The third theme is providing language learners with personalized, adaptable learning environments. Education can become more individualized thanks to AI-powered platforms that evaluate student performance and modify content to address specific learning gaps. An instructor commented:

> *"Adaptive learning platforms adjust the difficulty of exercises based on student progress, ensuring they are neither easy nor hard."*

Another teacher said:

> *"These platforms provide immediate feedback and additional resources tailored to each student's learning pace."*

A third teacher added:

> *"AI's ability to track and respond to individual learning needs helps learners stay engaged and motivated."*

AI allows teachers to create worksheets that are according to the level of the student (Zhai et al., 2021). Since most teachers do not have the time to tailor fit each activity, AI can do the differentiating for them through the use of Language Generation Models (Shabbir & Setiawan, 2021). The implications here are significant, as adaptive learning platforms can offer a customized learning experience that caters for learners' diverse needs, promoting more effective and individualized learning outcomes.

Theme 4: Writing Prompt Generation

The fourth theme is generating writing prompts and helping with writing instruction. AI can generate a variety of writing exercises and provide learners with organized instruction to help them become better writers. One teacher mentioned:

> *"AI-generated prompts inspire creativity in learners who might struggle to develop ideas independently."*

Another teacher shared:

> *"With AI, I can provide instant feedback on learners' writing drafts, helping them improve their structure and coherence."*

A third participant said:

> *"AI tools offer grammar and style suggestions that are invaluable for learners learning to write in a second language."*

The implications suggest that AI can support teachers by providing a consistent stream of engaging writing prompts and immediate, constructive feedback, enhancing learners' writing proficiency and creativity. Teachers may make use of generative AI to help learners generate prompts that will greatly aid in their writing (Shidiq, 2023). Using AI in this way will not impede learners' creativity, but rather, supplement it and allow them to write even better and more coherent pieces (Kaharuddin, 2021).

Theme 5: Language Evaluation and Performance Tracking

AI's assistance in assessing student development is demonstrated by its ability to facilitate language evaluation and competence tracking. AI can give teachers comprehensive insights into learners' performance by administering tests, analyzing the findings, and tracking competency over time. One teacher noted:

> *"AI-based assessments give a clear picture of each student's strengths and areas for improvement."*

Another teacher added:

> *"AI allows me to track learners' progress over time and adjust my teaching strategies accordingly."*

A third teacher said:

> *"AI tools provide detailed analytics on student performance, which helps create targeted lesson plans."*

The results indicate that AI can improve assessment processes and help teachers better understand and support learners' development. Tracking student progress is a great struggle that many educators face as some teachers deal with numerous learners from huge class sizes (Swiecki et al., 2022). AI can help alleviate this problem as it can provide instantaneous analytics on a student's performance, such as their strengths and weaknesses and major points for improvement (Talan & Kalınkara, 2023). This greatly simplifies the teacher's work as they do not have to thoroughly screen every output a student submits and create a report on it (Celik et al., 2022).

AI is revolutionizing language instruction. AI enables educators to deliver more efficient and individualized training by facilitating exams, generating writing prompts, supporting adaptive learning, and offering tailored feedback. These features not only improve the educational experience for learners but also free up teachers from administrative duties so they may concentrate more on instructing and less on mundane work. Incorporating AI in language instruction is a big step toward satisfying learners' demands and maximizing learning results.

5. Conclusion and Recommendations

The study explored the integration of AI in English language teaching. The findings from this survey shed light on the diverse strategies language educators employ to maximize the effectiveness of AI technologies in teaching practices. Personalized learning paths, scaffolded language practice, automated feedback and assessment, integration with authentic materials, and collaborative learning environments are critical strategies leveraged to enhance language learning experiences. Despite challenges such as technological constraints and pedagogical alignment, educators have reported successes in improving student engagement, proficiency, and autonomy through the strategic use of AI. These insights underscore the importance of continued exploration and implementation of innovative strategies to harness the full potential of AI in language education.

Based on the findings, several recommendations can be proposed to support educators in effectively integrating AI technologies into language teaching practices. Firstly, institutions should prioritize providing access to robust technological infrastructure and resources to facilitate the seamless implementation of AI-driven tools. Additionally, professional development programs and training initiatives should be offered to educators to enhance their digital literacy skills and pedagogical competence in utilizing AI. Furthermore, collaborative efforts between educators, technologists, and researchers are essential to co-designing AI solutions that align with language learners' needs and goals. Lastly, ongoing research and evaluation of AI integration strategies are crucial for identifying best practices, addressing challenges, and driving continuous improvement in language education. By implementing these recommendations, educators can capitalize on the transformative potential of AI to create dynamic and engaging learning environments that empower learners to succeed in language acquisition.

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