

Language Teaching in the Digital Age: A Comprehensive Framework for Integrating AI in Indian Classrooms

Kalyani Pradhan¹ and Pankaj Dwivedi²

¹Resource Person (Academic), National Testing Service-India
Central Institute of Indian Languages
Ministry of Education

² L-JRO & Assistant Director (Admin)
Central Institute of Indian Languages
Ministry of Education

²Email: pankajd.ciil@gov.in

Abstract

This study examines the current status of artificial intelligence (AI) integration in language teaching and learning in India, with particular reference to its opportunities and constraints. Data were collected through online questionnaires, and the final analytical dataset comprised 50 teacher responses and 50 learner responses. Supplementary written responses were also obtained from seven language teachers and four language learners. The findings indicate that AI can support language learning by improving access to resources, providing personalised learning, offering immediate feedback, and enabling interactive practice. At the same time, inadequate teacher preparation, unequal access to technology, data privacy concerns, and the need for continued human guidance may constrain its effective implementation. Based on these findings, the study proposes a framework for the responsible, context-sensitive integration of AI into Indian-language classrooms.

Keywords: Artificial Intelligence, Language Teaching, Indian Classrooms, Teacher Training, Student Engagement, Privacy and Security.

1. Introduction

The current state of AI technology is driving a paradigm shift across the entire education process and opening new avenues for teaching a second language, which requires intensive interaction between teacher and learner. Thus, for instance, India, with its multilingual environment and underdeveloped educational infrastructure, offers new opportunities to utilise AI technology. In addition, many studies indicate that AI can facilitate personalised learning, provide immediate feedback, and motivate students through adaptability and interaction. According to Luckin et al., "learning through AI systems can lead to enhanced pedagogical approaches, specifically in relation to personalised experiences" (2016, p. 5). At the same time, Holmes et al. suggest that adaptability plays an important role in educational success (2019, p. 12).

In language acquisition, artificial intelligence takes the form of chatbots, automated writing evaluations, voice recognition systems, and intelligent tutoring systems. According to Abdulqayyum and Potter (2024), integrating adaptive algorithms into applications such as Duolingo enhances grammatical accuracy by 22% more quickly than conventional classroom

settings do (p. 114). Indeed, there is enough opportunity for artificial intelligence to transform the way languages are learned in India's varied educational system.

However, there is certainly no shortage of impediments to the use of AI within the Indian education system. As observed by ASER (2022), while the share of smartphone users has grown massively in rural areas and reached 75%, it still cannot be presumed that a fast connection will be available everywhere in rural India, which creates a digital divide that affects the education process of disadvantaged communities living far away from major cities. Nevertheless, it is not enough merely to have the infrastructure.

Moreover, the application of AI technology might raise ethical issues. Privacy, security, and algorithm biases must be taken into account in the context of their influence on the application of AI technologies. Specifically, according to Williamson, biased data can yield biased results when considering marginalised learners (p. 68). Thus, AI technology must empower such learners.

Although existing studies and national reports provide evidence on digital access, AI-supported learning, personalised feedback, and educational technology adoption, limited empirical attention has been given to the pedagogical processes through which AI can be meaningfully integrated into multilingual Indian-language classrooms. In particular, there is insufficient evidence concerning how teachers and learners perceive AI-supported feedback, classroom activities, teacher preparedness, accessibility, and ethical safeguards within the same educational context. Therefore, the present study investigates the current status of AI use in language classrooms in India through an online survey comprising 50 teacher responses and 50 learner responses. It examines the perceived benefits and challenges of AI integration. It compares teacher and learner perspectives in order to identify the pedagogical, technological, and institutional conditions necessary for its effective implementation.

2. Literature Review

Research on the use of artificial intelligence in language education has grown considerably in recent years. AI-based tools are now being used for writing, reading, vocabulary development, grammar, pronunciation, speaking practice, assessment, and personalised learning (Huang et al., 2023; Rahman et al., 2024; Son et al., 2023). These tools can provide instant feedback, make adjustments to the activities based on learners' proficiency level, and give extra chances to practice independently. Nevertheless, a lot of current research is dedicated to higher education and English language learning. School education, multilingual classroom, and non-English environment receive relatively less attention.

Finally, there appeared some other technology tools which gained importance for language teaching. Chatbots can provide opportunities for practice in speaking and writing, get instant response, and repeat the task without being afraid of embarrassment. This might facilitate the decrease of anxiety and regular practice (Jeon et al., 2024; Kohnke et al., 2023). Nonetheless, such technologies cannot understand the emotions of learners, their social background, and cultural significance of certain issues. Thus, the implementation of these technologies requires proper pedagogical assistance and engagement of a teacher. Similar opinions were expressed by Selwyn (2019), who claims that AI should assist teachers but not substitute them, particularly in areas which need contextualization, emotional intelligence, critical thinking, and interpersonal communication.

Studies in bibliometrics demonstrate that the literature on AI in language education still tends to exhibit unequal distribution among various countries, universities, languages, and groups of learners (Jaleniauskienė et al., 2023; Rahman et al., 2024). Though there has been increasing use of AI-based tools in personalised learning and automated feedback, their efficiency will largely depend on the quality of instructional design and appropriateness of the technologies employed. Clark and Mayer (2023) argue that the effectiveness of technologies can only be achieved when they are in line with learning goals and pedagogical approaches. In other words, in language education, the tools should be chosen and applied based on learners' language proficiency level and background.

Teacher readiness is another factor that should be considered. Successful use of AI technologies requires that teachers will not only work with digital tools but also analyse AI-generated material, choose appropriate applications, develop learning activities and identify inappropriate answers. Professional development is needed in order to improve teachers' knowledge about AI and teaching skills. Teachers will likely encounter various challenges associated with technical assistance, rapid changes in technologies, and information overload (Titova & Temuryan, 2025).

The implementation of AI into the education sector poses various institutional and ethical issues. Data privacy, transparency, accuracy, bias, autonomy of learners, and technological dependence are some examples of such issues. These kinds of issues become even more significant in multilingual and socially heterogeneous environments because AI tools trained on an insufficient amount of data will not be able to accommodate marginalised languages and groups of learners. The United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2023) highlights the significance of all these factors.

However, despite the large volume of academic literature produced on the subject, there still exist three important research gaps. First, despite all the previous studies devoted to AI-based language learning and issues related to digital access, there has been very little research done on the integration of the technologies in pedagogy within multicultural and resource-uneven Indian schools. Second, there has been relatively little empirical research done on both teacher and learner perceptions of AI tools in their classrooms. Third, there has been very little research done on the interaction of factors like teacher readiness, technological access, privacy, algorithmic bias, human intervention, and institutional support that influences the introduction of AI in language classes.

The current study attempts to fill in these research gaps, exploring the perceptions of both teachers and learners in the Indian setting.

3. Methodology

3.1 Research Design

A mixed-methods research design was used to examine both participants' experiences with AI tools and their perceptions of their use. Quantitative data were collected through structured online questionnaires. These findings were supplemented by responses to three open-ended questions from seven language teachers and four language learners. Together, the two forms of data provided a broader understanding of the current use of AI among language teachers and learners in India.

3.2 Sample

The questionnaire was shared with language teachers and learners through non-probability convenience sampling. More than 50 complete responses were received in each category. After incomplete or largely unanswered submissions were removed, the first 50 complete teacher responses and the first 50 complete learner responses, arranged by submission time, were selected for analysis. This selection was made after data collection; no quota-based or participant-level matching was used.

Because both the language teachers and learners used the same online survey form, they were analysed as separate category-level response sets and do not necessarily represent 100 distinct individuals. The survey forms for the language teachers included different experiences, while those for the language learners included different educational levels. The profiles of the analytical sample are shown in Table 1 below.

Table 1: Profile of the Final Teacher and Learner Response Groups

Respondent group	Profile variable	Category	<i>n</i>	%
Teachers	Teaching experience	Less than 1 year	16	32
		1–5 years	14	28
		6–10 years	5	10
		More than 10 years	15	30
		Total	50	100
Learners	Educational level	School student, up to Grade 12	8	16
		Undergraduate student	11	22
		Postgraduate student	18	36
		Other	13	26
		Total	50	100

Note. The questionnaire recorded broad educational levels but did not collect institutional type or the exact grade or class of school-level learners.

Table 1 shows that the teacher group included respondents from all four experience categories, while the learner group represented school, undergraduate, postgraduate and other educational levels. Postgraduate learners formed the largest learner category, whereas the teacher responses were more evenly distributed across experience levels.

3.3 Instruments

Two structured questionnaires were designed, each consisting of 10 questions, one for language teachers and another for language learners. Each questionnaire contained nine single-response items and one multiple-response item, addressing participants' background information, technology and AI tools usage, perceived efficiency, difficulties faced, support needs, and attitudes towards AI-enabled language teaching and learning.

Three experts specialising in language education, educational technology, and educational measurement conducted the face and content validity checks of the questionnaires.

Relevance, clarity, understandability, and alignment with research objectives were assessed for all items. Then, both questionnaires were tested with five language teachers and five language learners, who were not included in the further analysis. Following feedback from the expert and pilot tests, some small changes were made to wording, instructions for multiple-response items, and the provision of examples of AI-enabled tools. No structural changes were needed.

3.4 Data Collection

The questionnaire was administered through Google Forms and circulated through education-related professional and social networks over a period of four weeks. Participation was voluntary, and respondents were recruited through non-probability convenience sampling. Follow-up reminders were circulated to improve participation and response completeness. The responses were recorded electronically and screened in accordance with the procedure described in Section 3.2.

Email addresses were collected only for response management and were removed before analysis. The analytical dataset was anonymised, and no identifying information is reported in the study.

3.5 Data Analysis

Quantitative data were analysed using frequencies and percentages. For single-response items, the percentage for each option was calculated using the number of valid responses to the respective question. For multiple-response items, each option was treated separately, and the percentage was calculated as the proportion of respondents who selected that option. Since respondents could select more than one option, the combined percentages for these items may exceed 100%. The multiple-response data were not converted to relative percentages or artificially adjusted to sum to 100%.

To supplement the quantitative findings, written responses obtained from seven language teachers and four language learners through three open-ended questions were analysed thematically following the six-phase procedure proposed by Braun and Clarke (2006): familiarisation with the responses, generation of initial codes, identification and review of themes, definition and naming of themes, and reporting of the findings. The responses were anonymised using the codes T1–T7 for teachers and L1–L4 for learners. Representative excerpts were selected to illustrate the themes and their relationship with the proposed framework. Given the limited size of the supplementary qualitative sample, the responses were used as illustrative evidence, and no claim of thematic saturation or generalisability is made.

3.6 Limitations

The small sample size, along with the non-probability sampling, makes the findings difficult to generalise. The self-reported data used in this study may be subject to social desirability bias and recall bias. Inferential statistical analyses were not conducted; therefore, the findings are considered suggestive rather than conclusive. Large probability samples are required for future studies to confirm these findings. Also, because the teacher and learner sections appeared in the same online form, some respondents may have contributed to both response categories.

3.7 Ethical Considerations

Participants were informed of the study's purpose, and their participation was voluntary. Email addresses were collected only for response management and were removed before analysis. The analytical dataset was anonymised, and no identifying information is reported. The data were stored securely and used only for the study.

4. Findings

4.1 Teacher Perspectives

4.1.1 Training on AI Tools

The results indicate a lack of teachers' preparedness to integrate technology into language lessons. Of 50 respondents, 24 teachers (48%) had received some training in technology use, whereas 18 teachers (36%) had not received any training. 8 respondents (16%) had undergone extensive training sessions. Consequently, although most respondents had attended training sessions, very few teachers had received adequate training.

This means that teachers may not be adequately prepared pedagogically to integrate AI-supported technologies into language classrooms. Just being familiar with technology does not mean teachers can select the right tool, analyse content, develop activities, or use AI for assessment and feedback.

The results, therefore, show that there is a need to develop training programmes that not only address technology awareness but also ensure the appropriate and responsible use of AI in language teaching.

4.1.2 AI Tools in Use

Teachers were allowed to choose more than one AI-powered tool. Among 50 teacher participants, 20 (40%) selected language learning apps, whereas 14 (28%) chose other AI tools. Chatbots with AI were chosen by 11 teachers (22%), AI-powered translation tools by eight (16%), and grading and feedback systems with AI by six (12%). Because participants could choose multiple options, the total percentages exceed 100%.

The study's findings clearly demonstrate that the application of AI technologies by language teachers in India is not uniform. Language-learning applications such as Duolingo and Hello English were the most widely used, demonstrating that teachers are familiar with easily accessible tools that provide training and feedback. Chatbot, translation, and grading and feedback applications were rarely used.

Overall, these findings clearly show increased usage and knowledge about AI-based tools among language teachers. However, the inconsistent application of these technologies across different types indicates that more advanced AI tools have not yet been applied.

4.1.3 Challenges in AI Integration

There are several challenges associated with the adoption of AI in the Indian classroom. The most common challenge identified is the challenge of training/knowledge on how to utilize AI tools, mentioned by 23 participants (46%). Ten participants (20%) stated that the technology was unavailable, while eight participants (16%) mentioned privacy issues/data security. Other challenges were mentioned by eight participants (16%), while one participant (2%) mentioned student/colleague resistance to AI.

It is important to note that 20% of the teachers indicated the inability to access the technology, and this can be an indication of the existence of a digital divide and challenges associated with providing equal access to learning using AI. Indeed, this problem is reflected in the concerns expressed in the Annual Status of Education Report (ASER, 2022).

4.1.4 Attitudes Toward AI Integration

Teachers mostly had a positive attitude towards recommending AI to support language learning. In total, 16 (32%) of the teacher participants were very likely to recommend the use of AI, whereas 20 (40%) were likely to do so. Hence, 72% of the teachers indicated that they were positive about making such a recommendation. Thirteen participants (26%) were neutral, whereas one participant (2%) was very unlikely to recommend it.

The data above show that teachers are willing to embrace AI in language learning. However, the presence of a neutral category indicates that some teachers need more evidence, guidance, and training on how to recommend the use of AI to their peers.

4.1.5 Impact of AI on Student Performance

The teachers held differing opinions about the impact of AI on student performance and engagement. In the sample of 50 teachers who responded, 19 (38%) teachers found that there was considerable improvement, and 17 (34%) found that there was some improvement in performance. Two (4%) teachers found that there was no change at all, whereas 2 (4%) found that there was deterioration. The remaining 10 (20%) teachers found that they had not incorporated any AI in their lessons.

Overall, 72% of the respondents reported improvements in performance and engagement. This shows that AI can help student performance and engagement if used in the right way. However, these cannot be considered automatic results of the use of technology.

The findings also indicate that one in five teachers had not yet incorporated AI into their teaching. This reinforces the need for appropriate training, institutional support, and practical guidance to help teachers use AI tools effectively for language instruction, assessment, and feedback.

4.1.6 Support Needed for AI Integration

Teachers were asked to identify the most important form of support required for the effective integration of AI into language teaching. Since this was a single-response item, each respondent selected only one option, and the percentages therefore sum to 100%. Among the 50 teacher respondents, professional-development workshops or training sessions emerged as the most frequently identified requirement, selected by 29 respondents (58%). Technical support for implementing AI tools was selected by 8 respondents (16%), while 6 respondents (12%) indicated a need for access to AI-powered tools and resources. Four respondents (8%) selected other forms of support, and three respondents (6%) preferred opportunities to collaborate with educators already using AI.

The strong preference for professional development shows that teachers see pedagogical preparation as the most urgent requirement for using AI effectively. Access to technology alone is not enough. Teachers also need to know how to choose suitable tools, design AI-

supported activities, assess AI-generated content, and use these tools responsibly. The responses further show that training should be supported by adequate technical assistance and institutional support.

These results demonstrate that a comprehensive system of teacher support is needed, including well-planned training programmes, access to appropriate and affordable AI tools, continuous technical support, and peer learning experiences. These measures should include both the process of working with AI applications and their proper, pedagogically correct, and ethically appropriate application in the multilingual classroom. This strategy aligns with UNESCO's (2023) approach to building teacher and institutional capacity for the responsible integration of AI in education.

4.2 Learner Perspectives

4.2.1 Use of AI-Powered Tools

The survey findings indicate that students enrolled in language learning courses are increasingly using AI software. According to the findings, 24% of the learners used such software quite often, and 52% used it sometimes. Combined, they account for 76% of participants, indicating that more than three-fourths of learners have used AI technology in language learning. The remaining 24% have not used AI technology in their language learning process. This implies the existence of a digital divide. According to the ASER (2022) report, the number of people with smartphones has been rising in rural areas; however, not all of them have access to broadband internet and digital tools.

Additionally, the discovery that 76% of participants have used AI language-learning applications further reinforces earlier studies highlighting the importance of AI technology in offering a personalised learning experience and boosting learners' engagement. According to Luckin et al. (2016), AI-powered personalised learning can positively impact learner engagement. Furthermore, according to Holmes et al. (2019), the use of adaptive learning technologies can increase the effectiveness of the learning process by meeting the needs of individual learners. Similarly, Abdulqayyum and Potter (2024) noted that Duolingo and other AI-powered tools can enhance grammar.

The use of a multidimensional approach could prove beneficial by raising awareness, building up digital literacy, creating infrastructure, and accessing AI technology. Until these problems are resolved, it will not be possible to leverage AI technology fully.

4.2.2 Perceptions of AI Effectiveness

Most participants viewed AI-supported language-learning tools as highly effective. Of 50 participants, 22 (44%) rated these tools as very effective, while 22 (44%) rated them as somewhat effective. Two (4%) viewed them as ineffective, and another four (8%) as uncertain. Hence, 88% of participants rated the tools as either very effective or somewhat effective.

The data above show high levels of acceptance of AI-supported language-learning tools among the participants. They also align with current literature by underscoring the importance of AI-based technology in enhancing personalised and adaptive learning. According to Abdulqayyum and Potter (2024), AI-based language-learning applications can enhance learning. The works of Luckin et al. (2016) and Holmes et al. (2019) highlight the importance of personalisation and adaptive learning environments.

The technologies of AI may be able to solve the problem of immediacy of feedback and personalised learning, especially in cases where the number of students in the classroom is high. The tools can supplement classwork when used properly for grammar exercises, pronunciation support, and assessment.

4.2.3 Preferred Features of AI Tools

Learners were asked to identify the features of AI-powered language-learning tools that they found most helpful. Since respondents could select more than one option, each percentage was calculated independently using the total number of learner responses ($n = 50$). Consequently, the percentages are not expected to sum to 100%. The questionnaire included real-life simulations, grammar and pronunciation assistance, personalised learning suggestions, interactive exercises and quizzes, and an “Other” category.

Table 2: Learners’ Preferred Features of AI-Powered Language-Learning Tools

Preferred feature	<i>n</i>	Percentage of learners
Real-life language simulations, such as chatbots	20	40%
Grammar and pronunciation assistance	17	34%
Personalised learning suggestions	16	32%
Interactive exercises and quizzes	15	30%
Other features	7	14%

Simulated real-life situations were the most commonly mentioned feature, chosen by 40% of respondents. The next most popular feature was grammar and pronunciation help – chosen by 34% of learners, followed by personalised learning suggestions (32%) and interactive exercises and quizzes (30%). Another 14% mentioned other helpful features. The fairly even distribution of choices across these four major features demonstrates that learners do not favour any one specific function; rather, they appreciate an AI application that combines situational interaction, correction, personalisation, and practice.

The choice of real-life simulations and help with pronunciation and grammar demonstrates the importance of situated practice and feedback in language acquisition. In the same manner, the interest in personalised suggestions is another proof of the appropriateness of the adaptive system, which would be responsive to learners' varying skills and needs, as described by Luckin et al. (2016) and Holmes et al. (2019). Therefore, in the Indian multilingual environment, AI-based language-learning apps should include culturally appropriate conversational scenarios, personalisation features, and support for the pronunciation and grammar of Indian languages.

4.2.4 Preferences for Language Learning Methods

Most learners preferred AI-integrated language classes. Of the 50 respondents, 40 (80%) believed that such classes would be beneficial. Five learners (10%) preferred traditional teaching methods, while another five (10%) were unsure. This trend shows how well AI is accepted as an auxiliary tool for language learning. In the words of Holmes et al. (2019), adaptive technologies can contribute to learning by adapting to the learner's learning pathway.

The results demonstrate the growing importance of engagement in AI-assisted language learning. It becomes clear that AI can be used as an integral part of language instruction, not just an optional tool. Nonetheless, its use must be pedagogically driven.

4.2.5 Perceived Benefits of AI in Language Learning

Students were asked to identify the most important advantage of using artificial intelligence in the process of learning languages in India. The task was formulated in such a way that there was only one answer possible; hence, all percentages sum to 100%. Out of the total number of 50 respondents who answered the question, 27 (54%) indicated the availability of practice materials as the most important advantage. Another 14 respondents (28%) considered personalised learning experience as the most important advantage; 8 respondents (16%) highlighted better feedback and assessment, and 1 respondent (2%) opted for something else.

It is clear from the above analysis that the most common choice of resources availability can indicate the possibility of getting extra practice materials, language examples, and practice. Moreover, the second most popular choice of learners was personalised learning experience which shows the importance of learners' interest in the technology that allows customising the content, its complexity and pace. Furthermore, the application of AI in the process of feedback provision is also valuable because it provides independent practice in regard to language skills.

Therefore, the analysis of answers shows that the primary benefits which learners appreciate in the use of artificial intelligence in language learning are access, personalisation, and feedback.

4.2.6 Motivation to Use AI Tools

One of the factors motivating the learners to use AI includes the personalised learning experience offered, which 18 (36%) of the respondents mentioned. Another factor is the ease of using the AI, which 14 (28%) respondents mentioned. The use of social media platforms was one of the factors picked by 9 (18%) respondents. There were six (12%) respondents who chose gamification as one of the motivating factors. There were three (6%) other factors chosen.

Examples of language applications like Duolingo use gamification and social media platforms to provide an interactive experience. It implies that there exists potential of using AI to offer personalised and interactive experience. Luckin et al. (2016) have highlighted the same issue, emphasizing on the potential of AI for personalisation and interaction.

4.2.7 Interest in Training Sessions

From the results, it can be seen that learners had a great interest in AI-related training. Out of the total 50 learners, 33 (66%) showed a very great interest while 11 (22%) showed some interest. Thus, 88% of the respondents showed interest in training on the use of AI-based language learning tools effectively. Only three (6%) learners were not interested while three (6%) were not sure about their interest.

From this interest in training, it can be said that there might be a gap between the use of AI by learners and its responsible use. Even though learners are aware of the benefits of AI in language learning, they might require some help to evaluate AI-generated content and make use of AI tools properly.

It would be useful for educators and educational institutes to train learners on AI and digital literacy. This is particularly due to the increase in the use of AI-related applications like Google Read Along to help the learners of Indian languages.

4.3 Qualitative Findings from the Follow-up Responses

The supplementary written responses from seven language teachers and four language learners were analysed thematically. Four recurring themes emerged: personalised and interactive learning; accessibility and infrastructure; teacher preparedness and human guidance; and ethical and responsible use of AI. Table 3 presents the principal codes, representative participant excerpts and their relationship with the proposed framework.

Table 3: Analytical Matrix of the Supplementary Qualitative Responses

Theme	Illustrative codes	Representative excerpts	Framework dimension
Personalised and interactive learning	Instant feedback, individualised practice, conversation practice, confidence, learner engagement	“They also allow me to practice conversations anytime” (L1). “AI makes language learning more engaging and personalised” (T4).	Collaboration and Empowerment
Accessibility and infrastructure	Unreliable internet, lack of devices, unequal technological access	“Limited internet access and lack of devices can be a challenge” (T4). “Internet access is not always reliable in my area” (L2).	Accessibility and Infrastructure
Teacher preparedness and human guidance	AI literacy, classroom implementation, verification of AI output, and teacher support	“AI training is essential for language teaching” (T3). “I still need guidance from my teachers to understand the correct concepts” (L3).	Training and Professional Development
Accuracy, privacy and responsible use	Incorrect information, overdependence, privacy, data protection, and human oversight	“AI-generated content sometimes contains errors, so teachers must carefully review the material before using it” (T6). “I may become too dependent on AI instead of thinking on my own” (L4).	Ethical Considerations

Note. T1–T7 represent teacher participants, and L1–L4 represent learner participants.

From the answers it follows that teachers and learners were aware of the value of using artificial intelligence in teaching and learning personalised practice, immediate feedback, language skills acquisition, and class preparation. However, all these benefits were possible only through having appropriate infrastructure, training, and assistance from the teacher. In addition, it was emphasized that any information provided by artificial intelligence needs to be verified, and students need to be prevented from over-reliance, inaccuracy, and improper use of personal information. Thus, the findings of the survey provide significant support for all four dimensions of the proposed framework. Accessibility and infrastructure are required

in order to provide equal opportunity. Professional development is needed for appropriate class implementation. Ethical concerns are needed in order to avoid inaccuracy, over-reliance, and privacy problems. Collaboration and empowerment are equally important because continued interaction among teachers, learners, institutions, and technology providers is necessary to preserve meaningful human guidance.

5. Discussion

The purpose of this research is to investigate the current status of AI integration in language classes in India, based on 50 teacher responses and 50 learner responses. There are many opportunities to do so, though some obstacles should be overcome.

5.1 Alignment with Existing Literature

These findings of this research match the findings of other past researches which show the importance of artificial intelligence in language learning. Instructors and students held positive perceptions towards AI in language learning, especially personalisation of instructions, feedback, and learner motivation. The results of this research match the results of other past researches conducted by Holmes et al. (2019).

Additionally, the results match those of Abdulqayyum and Potter (2024) as grammar error correction, pronunciation assistance, and personalised instructions were the key advantages of this technology mentioned by the participants. However, the research results indicate that the issues of the digital divide, lack of technology access, and poor instructor training, especially in impoverished communities, still exist. This was proved by ASER (2022) and UNESCO (2023).

5.2 Theoretical Implications

The findings make a contribution to the theory of AI in language teaching in the following two ways. First, they show that AI must not be regarded as a substitute for human teaching. From the additional written answers provided by the teachers, it became clear that AI could help in doing routine work like composing exercises, checking grammar and giving instant feedback and, thus, the teacher would be able to concentrate more on critical thinking, culture knowledge, context explanations and classroom interaction. In this way, the findings prove that AI may become complementary to rather than substituting teachers, while the teacher's position will move from being an informant to being a facilitator and a mentor.

Second, learners' focus on the relevancy of context, interaction, personal assistance, and instant feedback implies the significance of the constructivist and learner-centred approach to the development of AI-based language learning.

5.3 Practical Implications

These findings suggest three specific areas that should be addressed. Firstly, it is important to focus on teacher preparation. The percentage of respondents among teachers who stated that insufficient training or knowledge about AI technology is a major barrier is 46 per cent, while only 16 per cent have been through sufficient training in the area of technology integration. Consequently, it is necessary to design professional development programmes which will train teachers in the operation of AI technologies as well as their selection and integration into classroom practice in terms of lesson design, evaluation, teaching, assessment, and

feedback. The experience of organisations like the Central Institute of Educational Technology can serve as an example.

Secondly, there is the issue of the digital divide. According to 20 per cent of the teachers, lack of access to AI technology is the main barrier, while 24 per cent of the learners have never used language-learning software powered by AI. Thus, more investments should be made into the provision of affordable devices and connections as well as low-bandwidth or offline solutions.

Lastly, suitable ethics and institutions are important. Sixteen per cent of the teachers identified privacy or data-security concerns as their principal challenge. Institutions in education must, thus, ensure proper processes in terms of data protection, usage of the information, verification of the output from the AI application, and algorithmic bias and overreliance. Concerns about privacy, accuracy, transparency, and learner independence must be considered during the integration of the AI. These concerns align with the issues raised by Williamson (2019).

5.4 Contributions to the Field

This study makes two contributions to the extant literature. One contribution is to provide empirical evidence, based on teacher and learner feedback, in a multilingual, resource-constrained setting where little has been explored regarding AI-driven language learning. The other contribution is to demonstrate that the willingness to adopt AI technologies depends on several structural factors, such as teacher readiness, technological access, ethical considerations, and the provision of appropriate resources.

The additional qualitative results enrich these contributions by showing how the positive aspects of AI were coupled with the need for human guidance, adequate infrastructure, responsible use, and appropriate language-learning resources.

5.5 Limitations and Future Research

The study is subject to several limitations. First, the application of non-probability convenience sampling limits the generalisability of the findings. Given that the teacher and learner sections of the survey were conducted using the same online tool, some respondents may have provided answers in both categories. Second, the results obtained are inherently subject to self-report bias. Third, no inferential statistics have been used so that the results can be regarded as descriptive and hypothesis-generating, but not conclusive.

The qualitative part involved only a small sample of seven teachers and four learners, while the purpose of the study was to provide illustration rather than thematic saturation and/or sampling. Moreover, the survey included data about the general education level but did not include any data regarding the type of educational institution and grade of the school-level learners.

It would be helpful for future research to use a large and diverse sample based on probability, separation of teacher and learner samples, as well as longitudinal/classroom-based approach to researching AI-based language learning. Future studies might also include analysis of different models of professional development and discussion of such ethical problems as privacy, bias, accuracy, and learner dependence.

6. Framework for Integrating AI in Indian Classrooms

Based on survey findings, supplementary qualitative responses, and relevant literature, the study proposes a framework for systematically integrating artificial intelligence into language education in India. The framework comprises four interrelated dimensions:

- **Accessibility and Infrastructure:** Accessible and fair access to AI-enhanced learning entails the provision of proper hardware and software, sufficient internet access, appropriate costs for technologies, and options for low-bandwidth and offline learning solutions. This issue deserves special attention from learners and educational institutions in rural and less-resourced areas.
- **Training and Professional Development:** Continued professional development is needed for teachers in order for them to select appropriate AI applications, create AI-enabled learning experiences, assess AI-produced materials, and apply technologies properly for learning, testing, and giving feedback. Webinars and workshops can improve the situation.
- **Ethical Considerations:** Guidelines need to be developed by educational institutions related to privacy, security, consent, transparency, possible algorithmic bias, accuracy, and overdependence of learners. AI generated content still has to be verified by teachers.
- **Collaboration and Empowerment:** Implementation of AI-based technologies needs collaboration among various governmental bodies, educational institutions, teachers, learners, tech developers, and regulators. It must empower learners through personal practice while ensuring the importance of teachers for contextual explanations and interaction.

These dimensions are interrelated and need to be implemented together. There could be poor pedagogical utilisation if there is infrastructure but no teacher training, and ethical concerns if there is technology but no ethical safeguards. This model, therefore, ensures that AI integration is balanced and inclusive.

7. Conclusion

In the current study, the use of AI in language education in India was explored on the basis of 50 teacher responses and 50 learner responses. The researchers concluded that AI could improve language learning by providing enhanced access to learning resources, personalised practice, immediate feedback, and communication.

Nevertheless, such positive results are possible only if AI is properly integrated into language education. The lack of teachers' training, unequal access to technology, and the lack of guarantees concerning privacy and accuracy, together with dependency on AI systems, might negatively affect AI's efficiency. Therefore, AI can be considered a tool, but not a replacement for teachers who would help students understand cultural context and critical thinking, as well as evaluate information generated by AI.

Proposed AI integration model involves the following four aspects: accessibility and infrastructure; professional development and training; ethical issues; and collaboration and engagement. With the presence of particular factors such as infrastructure, training, ethical policy, and technologies, AI might be applied to create a new language education model.

References

Abdulqayyum, A., & Potter, J. (2024). *The impact of AI-driven applications on language learning outcomes*. *Journal of Language Education*, 12(2), 110–120.

ASER Centre. (2022). *Annual Status of Education Report (Rural) 2022*. Pratham Education Foundation. <https://asercentre.org>

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>

Clark, R. C., & Mayer, R. E. (2023). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (5th ed.). Wiley.

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Centre for Curriculum Redesign.

Huang, X., Zou, D., Cheng, G., Chen, X., & Xie, H. (2023). Trends, research issues and applications of artificial intelligence in language education. *Educational Technology & Society*, 26(1), 112–131.

Jaleniauskienė, E., Lisaitė, D., & Daniusevičiūtė-Brazaitė, L. (2023). Artificial intelligence in language education: A bibliometric analysis. *Sustainable Multilingualism*, 23(1), 159–194. <https://doi.org/10.2478/sm-2023-0017>

Jeon, J. H., Lee, S., & Choi, S. (2024). A systematic review of research on speech-recognition chatbots for language learning: Implications for future directions in the era of large language models. *Interactive Learning Environments*, 32(8), 4613–4631. <https://doi.org/10.1080/10494820.2023.2204343>

Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal*, 54(2), 537–550. <https://doi.org/10.1177/00336882231162868>

Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence unleashed: An argument for AI in education*. Pearson.

Rahman, A., Raj, A., Tomy, P., Hameed, M. S., et al. (2024). A comprehensive bibliometric and content analysis of artificial intelligence in language learning: Tracing between the years 2017 and 2023. *Artificial Intelligence Review*, 57, Article 107. <https://doi.org/10.1007/s10462-023-10643-9>

Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.

Son, J.-B., Ružić, N. K., & Philpott, A. (2023). Artificial intelligence technologies and applications for language learning and teaching. *Journal of China Computer-Assisted Language Learning*, 5(1). <https://doi.org/10.1515/jccall-2023-0015>

Titova, S., & Temuryan, A. (2025). Teacher professional development for generative AI: Barriers and solutions. *Journal of Digital Learning in Teacher Education*, 41(1), 34–49.

UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO. <https://unesdoc.unesco.org>

Williamson, B. (2019). Educational governance, leadership and technology. In C. Higham, D. Hopkins, & E. Ozga (Eds.), *Theories of educational leadership and management* (pp. 61–75). Routledge.