BILINGUAL PUBLISHING GROUP

Forum for Linguistic Studies

https://journals.bilpubgroup.com/index.php/fls

ARTICLE

Exploring the Impact of Artificial Intelligence on Language Acquisition, Linguistic Development, and Language Use: A Case Study from India

Aby John

Faculty of Philology, Institute of Modern Languages, Intercultural Communication and Migration, RUDN University (Peoples' Friendship University of Russia), 6, Ulitsa Miklukho-Maklaya St, Moscow 117198, Russia

ABSTRACT

Artificial Intelligence (AI) significantly contributes to linguistic development in the contemporary scenario. Although the presence of AI is evident in language teaching, studies related to its role in building Teacher-Student Rapport (TSR), Teacher Immediacy (TI) and Willingness to Communicate (WTC) are scarce. This study explores how teacher-student rapport and students' attitudes towards artificial intelligence intersect in a technology driven world. It sheds light on strategies to enhance engagement and motivation in language education. By integrating insights from existing research, this inquiry seeks to investigate the role of AI in fostering TSR, TI and WTC. Thus, it reveals the complex relationships between these variables and bridges the existing research gap. Data were collected from 50 ESL teachers and 165 ESL students in higher education institutions in two different south Indian states namely Tamil Nadu and Kerala. Moreover, data obtained through in-depth interviews with teachers who are trained to use AI for English language teaching are also analyzed in this study. The questionnaire's internal consistency and reliability were rigorously tested using Cronbach's alpha coefficient. The collected data underwent a comprehensive analysis, incorporating a range of techniques: a five-point Likert scale to gauge attitudes, percentage calculations for quantitative insights, graphical representations for visual clarity, flowcharts to illustrate processes, and descriptive analysis to contextualize the findings. The result of the study shows that AI plays a pivotal role in enhancing TSR, TI and WTC. It also highlights the significance of human interaction and feedback in language teaching, due to language's ambiguous nature.

*CORRESPONDING AUTHOR:

Aby John, Faculty of Philology, Institute of Modern Languages, Intercultural Communication and Migration, RUDN University (Peoples' Friendship University of Russia), 6, Ulitsa Miklukho-Maklaya St, Moscow 117198, Russia; Email: drabyjohnpk@gmail.com

ARTICLE INFO

Received: 6 February 2025 | Revised: 17 March 2025 | Accepted: 19 March 2025 | Published Online: 20 March 2025
DOI: https://doi.org/10.30564/fls.v7i3.8671

CITATION

John, A., 2025. Exploring the Impact of Artificial Intelligence on Language Acquisition, Linguistic Development, and Language Use: A Case Study from India. Forum for Linguistic Studies. 7(3): 1104–1117. DOI: https://doi.org/10.30564/fls.v7i3.8671

Keywords: Artificial Intelligence; Linguistics; Higher Education; Technology; English as a Second Language

1. Introduction

Artificial Intelligence (AI) plays a pivotal role in the realm of language learning. Incorporating AI in language learning can resolve several intricate problems like unwillingness to speak, limited class time and inadequate opportunities to speaking practice. It revolutionizes language learning by offering personalized and immersive experiences. AI-powered language learning platforms utilize machine learning algorithms to tailor instruction to individual learners' needs, levels, and learning styles. By leveraging AI, language learners accelerate progress, build confidence, and develop nuanced cultural understanding. As AI technology advances, language instruction becomes increasingly effective, efficient, and engaging. It is also capable of providing personalized instruction and feedback to every student to a great extent. Even though youngsters are perceived as tech-savvy, many of them are not competent to use AI effectively for learning. Recent studies [1] have shown that the learning experiences and performance of students are highly influenced by the ways in which they approach offline and online learning. Effective teacher-student rapport and teacher immediacy are recognized as key factors that boost student engagement and motivation. It leads to improved language learning outcomes [2, 3]. AI plays a pivotal role in developing the language skills of ESL students. Although the presence of AI is evident in language teaching, studies related to its role in building Teacher-Student Rapport (TSR), Teacher Immediacy (TI) and Willingness to Communicate (WTC) are scarce. This study explores how teacher-student rapport and students' attitudes toward artificial intelligence intersect in a technology driven world. It sheds light on numerous strategies which help to enhance engagement and motivation in language education. By integrating insights from existing research, this inquiry seeks to investigate the role of AI in fostering TSR, TI and WTC. Thus, it reveals the complex relationships between these variables and bridges the existing research gap. Overall, it tries to answer the following questions:

RQ1: Does AI facilitate teacher immediacy (TI), teacher-student rapport (TSR), and students' willingness to communicate (WTC)?

RQ2: Does AI effectively support language education by augmenting overall language learning process?

RQ3: Do ESL students' attitudes towards AI, overall teacher-student rapport and teacher immediacy intersect to influence students' WTC?

1.1. Literature Review

Artificial intelligence refers to a suite of advanced technologies that enable machines to automatically perform tasks, make decisions, and optimize solutions to achieve well-defined objectives. Thus, it minimizes the need for explicit human intervention. AI agents in this study refer to entities that are capable of performing tasks related to intelligent beings through reasoning, learning, and expressing themselves, to a certain extent [4, 5]. The use of affordable AI agents such as chatbots and conversational agents for L2 learning have been increasing in recent years [6]. Students' willingness to communicate (WTC) plays a vital role in language learning. It provides learners with authentic opportunities to practice and apply the target language in real-life contexts [7–9]. Understanding how students perceive AI and its impact on critical thinking is crucial for designing language learning environments that are effective in the AI era [10]. As artificial intelligence becomes increasingly integrated into educational settings, examining the relationship between language learners' attitudes towards AI and their communication behaviours becomes essential to understanding its impact [11, 12]. By examining the role of AI and its relation to variables such as TSR, TI and WTC within the context of English language learning, researchers can gain valuable insights into the key factors influencing effective language acquisition and communication. It ultimately enhances teaching practices [13–16]. Languages like English have a prestigious reputation and are taught almost everywhere in the world [17]. Teachers can use AI to make language learning interesting and effective. Numerous studies emphasize the significance of teachers' immediacy behaviours in predicting students' engagement and willingness to communicate in the classroom. It highlights its crucial role in academic settings [18–20]. In another study,

it was observed that the success of learning a new language is basically linked to the attitude of the person [17, 21]. Studies also discovered that AI agents are valuable and useful to improve the non-linguistic and linguistic performance of the students [22].

Integrating AI in language classrooms offers vast potential for tailored learning experiences, adaptive feedback, and genuine language practice. It revolutionizes the learning process [2, 23]. It is vital to balance the advantages of AI with the cultivation of positive teacher-student rapport. It ensures a harmonious and effective learning environment. At the same time, the pedagogy about the use of AI agents in language learning is still nascent [22]. Several studies have highlighted the positive influence of AI on effective learning. As [24] points, teachers can use digital media, electronic literature, and other technological tools to teach English and other foreign languages. This hybrid research delves into the depths of the nuanced effects of integrating AI in language learning. It addresses the existing research gap by throwing light on the potential pros and cons of using AI in language education. It also shows how AI influences TSR, TI and WTC. The use of AI in language learning is increasing day by day as technology improves [2]. Investigating how students' perceptions of AI influence their language learning journeys and willingness to engage in communication is essential [16, 25, 26]. Investigating willingness to communicate (WTC) in English as a Second Language (ESL) learning context is crucial due to its significant impact on effective language acquisition and communication strategies [2, 27]. WTC facilitates learners' interactions with speakers from diverse cultural backgrounds. It fosters cross-cultural understanding and intercultural competence [28]. While previous studies have examined individual aspects of the variables, a comprehensive investigation simultaneously exploring their synergistic effects on WTC within ESL education is lacking. This knowledge gap highlights the need for a holistic study integrating both quantitative and qualitative approaches to explore the role of AI in building teacher immediacy (TI), teacher-student rapport (TSR), and willingness to communicate (WTC) in language learning. Researches on the impact of TSR and TI in enhancing students' WTC, and the role of AI in augmenting overall English language learning process are scarce. This study aims to fill this existing knowledge gap by synthesizing relevant findings. The results of this study can shape the creation of teaching methods that effectively utilize AI technology to improve students' language abilities, motivation, and overall learning experience. Ultimately, these insights help to comprehend the constraints and utility of using AI technology in language education. It also helps the academicians and researchers to develop novel teaching strategies. By understanding the relationships between these factors, teachers can develop effective instructional practices that harness AI technologies and nurture positive teacher-student relationships [2]. It will significantly enhance language learning outcomes.

2. Materials and Methods

2.1. Study Locale

The study was administered to a larger, diverse sample of 215 participants (comprising 50 ESL educators and 165 ESL students) from higher education institutions spanning two major Indian states namely, Tamil Nadu (constituting 57% of the sample) and Kerala (constituting 43% of the sample). The participants in the study had a gender distribution of 30.3% female, 69.1% male, and 0.6% who preferred not to disclose their gender. Moreover, in-depth interviews with 7 teachers who were trained to use AI for English language teaching were also conducted to collect data.

2.2. Design of the Study and Data Collection Procedures

In order to ensure the survey's validity and reliability, the questionnaire was meticulously developed and refined through a pilot test involving 18 individuals (8 faculty members and 10 students). It helped to clarify the technical terms that caused confusion among some students. Thereafter, it was distributed among the respondents to collect the data for the study. In order to foster candid responses, the questionnaire guaranteed the anonymity of participants. It promoted uninhibited sharing of thoughts and opinions. Furthermore, the study adopted a purposive sampling strategy and deliberately selected participants to capture a wide range of perspectives. The questions asked mainly focused on the role of AI in developing teacher-student rapport, teacher immediacy, willingness to communicate, and the strategies teachers would employ to effectively integrate AI in language teach-

ing. It also discussed the effectiveness of AI in augmenting overall language learning process.

2.3. Research Instrument and Data Analysis

Purposive sampling was employed to select the participants. The respondents completed the survey questionnaires (questionnaires for the students and educators were formulated by the author to conduct the study) in a five-point Likert scale format. It is a non-probability sampling method where participants are selected based on specific criteria or characteristics relevant to the research study. This approach allows researchers to target specific individuals or groups that can provide rich, in-depth insights into the research topic [29]. The demographic data of the students were collected with the support of student questionnaire and the teaching roles were verified with the assistance of educator questionnaire. The questionnaires assessed the impact of integrating AI in language learning and its role in developing TSR, TI and WTC. The role of AI in effectively supporting language education and its capacity to augment overall language learning process were also assessed with the support of the questionnaire. Interviews with faculty members were also conducted to increase the credibility of the results. Data analysis utilized a five-point Likert scale, with calculated range and interval values. The mean interval scale categorized responses from highly positive to highly negative. Graphical analysis and descriptive statistics supported the findings, with Windows applications enabling all analyses.

3. Results

This study has three sections. The first part of the study focuses on the responses given by ESL educators whereas the second section of the study deals with the perspectives of the students. The third part of the study discusses the interview conducted with teachers who are trained in using AI for English language teaching.

Several questions were asked to ESL educators to analyse the role of AI incorporated language classes in enhancing TSR, TI, and students' WTC. The questions also inquired whether AI effectively support language education by providing seamless access to high-quality language learning materials and augments overall language learning process. It also explored whether ESL students' attitudes towards AI, overall teacher-student rapport and TI impact their WTC and language proficiency. The average values obtained for the questions are 1.82, 2.00, 2.22, 3.16, 1.86, 2.00, 2.04 for Q1, Q2, Q3, Q4, Q5, Q6 and Q7 respectively. The details are presented in **Table 1** and **Figure 1**.

Table 1. Results obtained after distributing the questionnaire among ESL educators in higher education institutions.

Questions	Average Value	Explanation of the Result in a Nutshell
Q1	1.82	AI provides easy access to standard ESL resources to a great extent and increases TSR
Q2	2.00	AI helps in increasing the language proficiency of the students to a significant extent and promotes their WTC
Q3	2.22	AI facilitates personalized learning in language learning to some extent
Q4	3.16	The possibility of replacing human teachers with AI teachers in future is comparatively low and the value of TI is high
Q5	1.86	AI facilitated gamified English language learning modules help significantly in enhancing English language proficiency of students, especially for general communication and it improves their WTC
Q6	2.00	AI assisted gamified English language learning modules help in improving the subject-related technical communication skills of students to a great extent
Q7	2.04	ESL educators face severe challenges like time constraints, technology-related difficulties etc. in real classroom scenario while incorporating AI and gamification

On the other hand, 20 questions were asked to ESL students. It helped to analyze the correlation between ESL students' perceptions of AI incorporated language classes and its capacity to develop TSR, TI, and students' WTC. It also explored whether ESL students' attitudes towards AI, overall TSR and TI impact their WTC and language proficiency. The average values obtained and its explanation in a nutshell are given in **Table 2** and **Figure 2**.

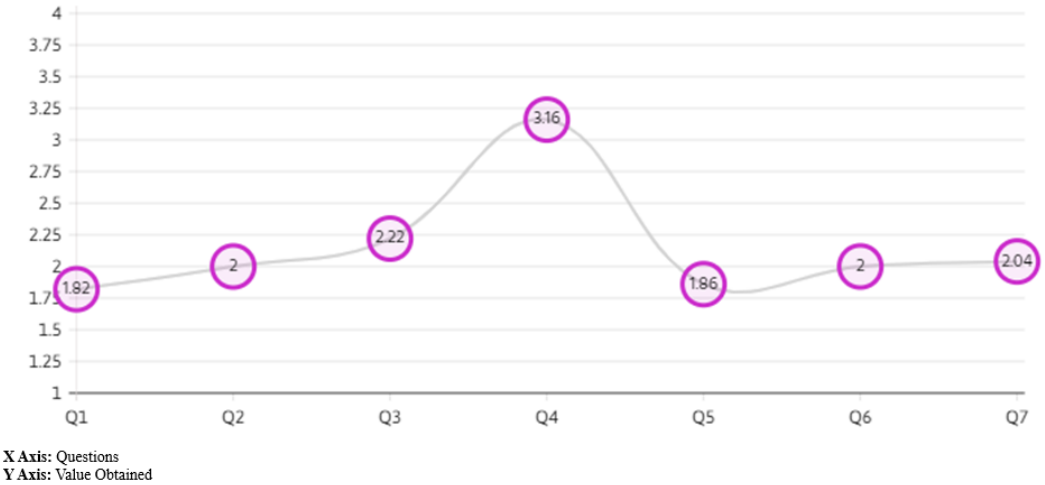

Figure 1. Graphical representation of the responses received from ESL educators.

Table 2. Results obtained after distributing the questionnaire among ESL students in higher education institutions.

Questions	Average Value	Explanation of the Result in a Nutshell
Q1	1.87	AI is moderately effective in providing a wide range of authentic language learning materials for learners.
Q2	1.93	AI facilitates access to culturally diverse language resources to some extent.
Q3	1.99	The coverage of AI-powered language learning materials in catering to various proficiency levels and learning styles is moderately comprehensive.
Q4	1.73	AI powered language learning materials are very accessible compared to traditional resources.
Q5	1.77	AI contributes to improve the language proficiency among learners to a significant extent and it increases the learners' WTC.
Q6	2.07	AI assess learners' language skills and progress in a moderately accurate manner.
Q7	2.05	AI caters to individual learners' language learning pace and style in a moderately effective way which promotes the learners' WTC.
Q8	2.15	AI based language proficiency assessments are moderately reliable compared to human evaluations.
Q9	1.98	Personalized learning facilitated by AI is moderately beneficial in language acquisition.
Q10	2.06	AI driven personalized learning adapts to learners' strengths and weaknesses to some extent.
Q11	1.96	AI generated personalized feedback is moderately motivating for language learners and it increases TSR.
Q12	2.00	Language learners are moderately satisfied with the level of customization AI provides in language learning materials.
Q13	1.90	Language learners significantly feel the need for more human interaction in AI assisted language learning environments and it denotes the necessity of TI in ESL classes.
Q14	1.93	The learners slightly prefer human feedback than the feedback provided by AI and it demands the importance of TSR and TI.
Q15	2.23	The learners find it moderately challenging to comprehend the ambiguous nature of language with AI assistance alone.
Q16	2.09	The learners struggle moderately with understanding language nuances in AI only instruction.
Q17	1.83	AI supported gamified English language learning modules are significantly effective in enhancing students' language proficiency and ultimately it improves their WTC.
Q18	1.96	Gamified language learning activities are very much engaging and it fosters active participation among ESL students. It boosts WTC.
Q19	2.00	AI driven gamified modules significantly improve students' ability to articulate complex technical concepts in English.
Q20	2.15	AI based gamified learning activities are interactive in nature and it facilitates peer to peer technical communication practice among ESL students. It improves WTC.

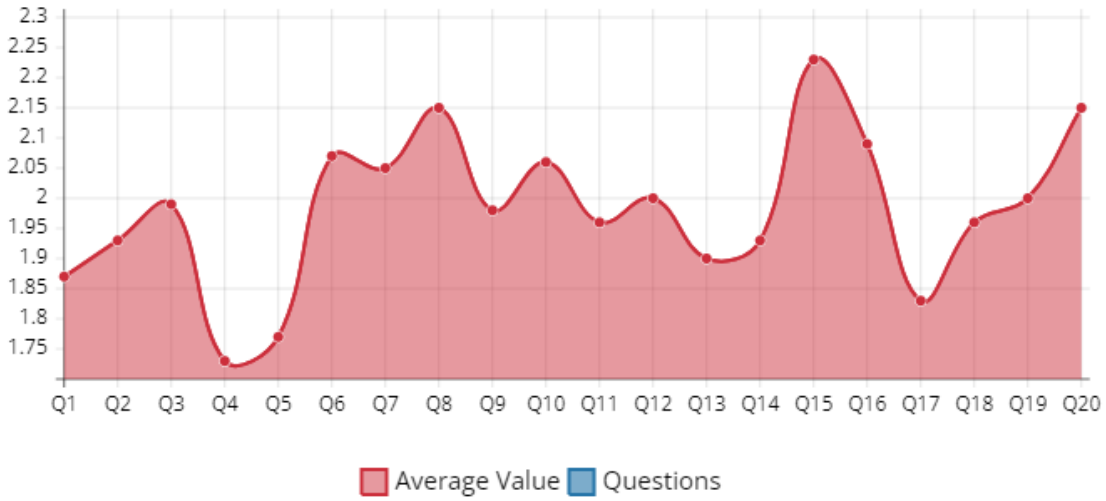

Figure 2. Graphical representation of the responses received from ESL students.

The interviews collected responses from 7 faculty members who are specialized in language teaching using AI. Eight questions were asked to these teachers and their responses were recorded. In order to maintain the anonymity of the responses, the teachers were named as A, B, C, D, E, F and G. The questionnaire (prepared for this study) is enclosed as **Appendix A** and the responses are given in **Table 3** and **Table 4**.

Table 3. Responses collected from educators who are trained in using AI for English language teaching (Questions 1–4).

Educator Identifiers	**Questions Based on TSR**		**Questions Related to TI**	
	Q1	Q2	Q3	Q4
A	AI tools offer smart learning, real time feedback and continuous progress monitoring. It helps a lot in enhancing teacher-student rapport.	Yes, it's actually helping the teachers by providing individual feedback to the students.	It gives individual space for learners. Finding time for them and knowing their importance make them feel connected.	It provides teachers with real-time insights into students' learning preferences, weaknesses, and strengths. It helps teachers to use personalized methods.
B	AI tools facilitate personalized feedback and support, in accordance with the given commands.	Sure. It helps to reduce teachers' workload and allows more time for individualized student interaction and rapport-building.	AI driven tools can increase student engagement and foster connection. Real-time facial recognition is a pivotal aspect.	It gives a comprehensive analysis of the students within a short span of time.
C	It helps to give feedback in ESL classrooms, track progress and assist teachers to focus on building rapport with the students.	Yes, it provides teachers with more space and time by reducing their workload, handling common student queries, and allowing for greater interaction and personalized engagement with students.	It will assist in real-time language translation, speech recognition, and automated engagement prompts.	Student behaviour, performance, and engagement can be easily monitored.
D	In ESL classrooms, AI can free up teachers' time. It also helps to analyse students' language development through the process of interactions and tasks given to the students.	These virtual assistants help to memorize the tasks and help to communicate with the students in a better manner. It also helps the students to practice language continuously.	The video conferencing method helps teachers to analyse students' performance in a better manner. It also helps to enhance the performance of the students and teachers.	AI helps to identify the learning style of the student, his/her weaknesses etc.

Table 3. *Cont.*

Educator Identifiers	Questions Based on TSR		Questions Related to TI	
	Q1	Q2	Q3	Q4
E	I feel that it would be more artificial than real feedback. But still, it helps the students a lot in improving their language skills.	To a great extent, especially when it's related to preparing question papers and PPTs.	The presence of a teacher helps students to grasp the ideas easily, especially with interactive sessions. It will help the students to understand the cultural nuances in a better manner.	This would keep the teachers more up-to-date with the interest of the students, especially considering the generation gap.
F	More effective feedback can be given to the students.	Workload can be reduced. This helps the teachers to have more time to interact with the students.	AI-enhanced video conferencing platforms will help to sustain the attention of the students and ultimately it will keep the students connected to the teacher.	More effective instructional adjustments can be made according to the students' learning styles.
G	AI-powered tools can help both the teacher and the student in facilitating personalized feedback. It can enhance the personalized method of teaching.	Yes definitely. AI tools make the teachers work more easily and comfortably. Thus, they can utilize their time for more student interactions.	The advanced AI technology in video conferencing can create a different experience for students and hence it will have new impact on them.	AI can suggest new teaching methods and hence bring different teaching approaches.

Table 4. Responses collected from educators who are trained in using AI for English language teaching (Questions 5–8).

Educator Identifiers	Questions Dealing with WTC		Questions Regarding Integration and Effectiveness of AI	
	Q5	Q6	Q7	Q8
A	Yeah, it's really impactful among students. It's interesting with games and it helps to have lots of fun while learning.	Real-time feedback would be helpful.	I will be using interactive chatbots and games.	I prefer surveys and feedback analysis.
B	Sure. I use apps like Duolingo for learning language. Likewise, AI powered apps are useful.	It promotes critical thinking with sufficient data.	It depends on learning objectives	Through survey and research.
C	Yes, it can improve ESL students' willingness to communicate by providing a low-pressure environment.	To share ideas by providing structured, unbiased, real-time feedback.	Effective interactive sessions, prompt feedback methods and automated assessment systems will be used.	I will make use of feedback surveys, performance metrics, student interviews etc.
D	Yes, through AI interactive session, the learners can improve their speaking skills in ESL classes.	It helps students to have self-analysis and it motivates them to develop various creative ideas.	Discuss and find the interests of the students and will try to integrate those applications in the teaching module. I will also ensure proper accessibility.	By giving them several communication-related activities.
E	To a great extent.	It will have a lasting impact on the learners and contributes positively in enhancing their language skills.	I will go for AI made activities, PPTs, and interactive games for learners.	I will make use of surveys and feedback collection from students. Personal interviews will also be conducted.
F	Yes, it helps significantly in developing the WTC of ESL students.	More effective feedback by AI results in meaningful discussions.	Will try to make teaching-learning process more interesting by embedding gamified elements in language teaching.	Continuous observation of the learners.
G	Yes definitely. It can enhance their communication skills.	They can engage freely and comfortably compared to other methods.	By using activities and games generated by AI tools.	Will compare the changes before and after using AI tools.

4. Discussion

The study conducted among ESL educators unveiled several crucial aspects related to the use of AI in ESL teaching. It assessed the perspectives of ESL teachers on incorporating AI in language teaching and its impact on TSR, TI and WTC. The observed values for Q1, Q2, Q3 and Q5, Q6, Q7 were in between 1.81–2.60 as per the mean interval. It implies that AI provides standard ESL resources and helps to increase TSR to a great extent. AI also helps in improving the language proficiency level of the students and increases their WTC. On the other hand, the possibility of replacing human teachers with AI teachers in future is comparatively low as the TI value is high. (Q4 = 3.16). 85.7% ESL educators stated that AI provides easy access to standard ESL resources and it helps to increase the TSR rate. It is also observed that AI helps in increasing the language proficiency of the students to a significant extent and this motivates the students significantly. Ultimately, it leads to increased WTC level. 82.5% educators seconded this opinion. The ESL educators also noticed that AI facilitates personalized learning (73%) and the possibility of replacing human teachers with AI teachers in future is comparatively low. This sheds light on the importance of TI. Research has consistently shown that both teacher immediacy and teacher-student rapport have a positive impact on student motivation, engagement, and WTC [10, 30–32]. It is also noticed that AI supported gamified English language learning modules enhance English language proficiency of the students and the students find it comfortable to communicate with their friends in the target language. It increases WTC and 82.5% ESL educators supported this observation. 77.8% ESL educators opined that gamified English language learning modules help in improving the technical communication skills of the students. Meanwhile, 81% ESL educators face severe implementation challenges while providing AI assisted training to the students in real classroom scenario.

The study conducted among ESL students paved way for the clarification of numerous questions related to the use of AI in language learning and teaching. ESL students' point of views regarding integrating AI in language teaching and how it is linked to TSR, TI and WTC are vividly presented in this study. All the questions, except Q4 and Q5, had the mean interval scale value 1.81–2.60. 83.3% ESL students opined that AI is effective in providing a wide range of authentic language learning materials for learners. When 74.9% students stated that AI facilitates access to culturally diverse language resources, 77.1% supported the capacity of AI-powered language learning materials in catering to various proficiency levels and learning styles. This goes in line with the previous studies. Studies have shown that AI can significantly influence language learning experiences and communication skills [26, 27, 33]. 79.3% ESL students found that AI-powered language learning materials are highly accessible compared to traditional resources. Meanwhile, 80.4% respondents observed that AI contributes significantly in improving language proficiency among learners and increases their WTC.

They also pointed that AI accurately assess learners' language skills and progress. 73.2% had this opinion. This finding corresponds to the findings of previous researchers. Studies state that the students who viewed AI as a valuable resource for language learning demonstrated increased enthusiasm and participation in communicative activities [32, 34, 35]. It is also observed that AI caters to individual learner's language learning pace and style in a moderately effective way. It promotes the learner's WTC. 71% ESL students supported this view. A supportive and engaging learning environment plays a pivotal role in cultivating student confidence, promoting participatory learning, and strengthening their willingness to communicate effectively in ESL settings. The students also stated that AI based language proficiency assessments are highly reliable compared to human evaluations and 67.6% seconded this perspective. The personalized learning facilitated by AI in language acquisition is highly beneficial to many students and 71.5% ESL students are highly satisfied with this feature. 70.9% ESL students felt that AI driven personalized learning adapts to learners' strengths and weaknesses and they stated that AI is very much motivating in generating personalized feedback for language learners. Integrating AI into education has the potential to revolutionize language instruction by providing tailored feedback, facilitating interactive practice, and offering adaptive learning experiences. Studies of [36] also emphasize the same notion. It is also observed that these features increase the TSR and WTC rate. On the other hand, 2.8% respondents were slightly dissatisfied with the level of customization AI provides in language learning materials.

It is worthy to note that 74.9% language learners signifi-

cantly felt the need for more human interaction in AI assisted language learning environments. It emphasizes the necessity of TI in ESL classes. It is noticed that the students prefer human feedback than the feedback provided by AI. This too demands the need and significance of TSR and TI in language teaching classes. Only a very few students (5.6%) had difference in opinion. Meanwhile, it is revealed that the ambiguous nature of language is challenging for the learners and they cannot manage it with AI assistance alone. They find it very hard to understand language nuances only with AI instruction. While 77.7% ESL students stated that AI supported gamified English language learning modules are significantly effective in enhancing their language proficiency and improving WTC, 72% found that gamified language learning activities are very much engaging. It fosters active participation among ESL students. It also boosts their WTC. This finding is congruent with the observations of[2, 37]. They state that effective incorporation of AI into higher educational settings is essential for designing more fruitful and engaging learning environments. It enhances teacher-student interactions and builds good rapport. In tandem with this, it is understood that AI driven gamified modules significantly improve the students' ability to articulate complex technical concepts in English. 72% ESL students seconded this observation. WTC can also be improved with the support of AI based gamified learning activities. 69.9% ESL students stated that gamified activities are interactive and facilitate peer to peer technical communication practice. Apart from these positive aspects, the learners also noted certain challenges in incorporating AI in language learning. Lack of human interaction, difficulty in understanding the cultural nuances, the ambiguous nature of language, lack of human feedback etc. were certain disadvantages. These disadvantages can be successfully overcome with effective TSR and TI. **Figure 3** and **4** present the benefits and drawbacks of incorporating AI in language learning.

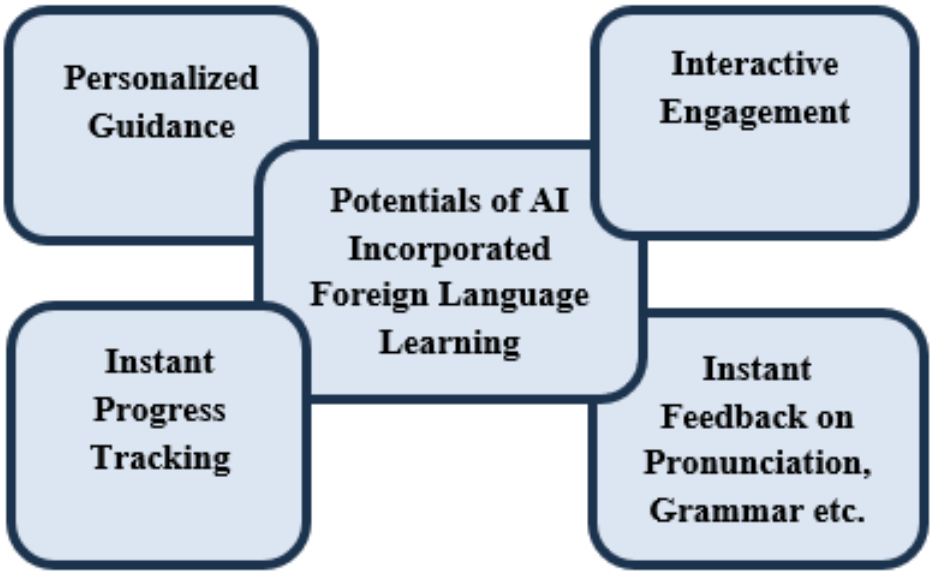

Figure 3. Advantages of AI-incorporated language learning which leads to increased WTC.

The interviews with teachers who are trained in using AI for ELT revealed numerous facts. The questions asked during the interviews were classified into four categories. Each category had questions related to TSR, TI, WTC and effectiveness of integrating AI in language classes. The result of the study gave several insights regarding incorporating AI in language teaching. The teachers stated that AI provides smart learning opportunities, real-time and effective feedback, and enables continuous progress monitoring. It facilitates personalized feedback and supports rapport building with the students. It not only helps the students but also the teachers. It helps to free up teachers' time. On the other hand, it is also noticed that the feedback provided by AI seems to be artificial in some instances. The teachers also

pointed that using AI in language classes helps the students to practice language continuously. It can also provide individual space for the learners and fosters connection. It enhances the performance of the students and educators. It can sustain the attention of the learners and keeps the students connected to the teacher. It also gives the teachers real-time insights into students' learning preferences, strengths and weaknesses. It enables the teachers to use personalized methods. Technology-incorporated language classes help ESL students to use different games, interactive chatbots and apps like Duolingo for learning and practicing language. It reduces the peer-pressure and improves their willingness to communicate as AI facilitates a low-pressure environment. It also improves the critical thinking and creative skills of the students. The educators can ensure the effectiveness of AI in language classes using various means like surveys, feedback analysis, speaking skill enhancement activities, continuous observation of the learners etc. These findings align with the previous studies of[10, 13, 30]. Thus, it is lucid that incorporating AI in language teaching builds teacher-student rapport, teacher immediacy and students' willingness to communicate.

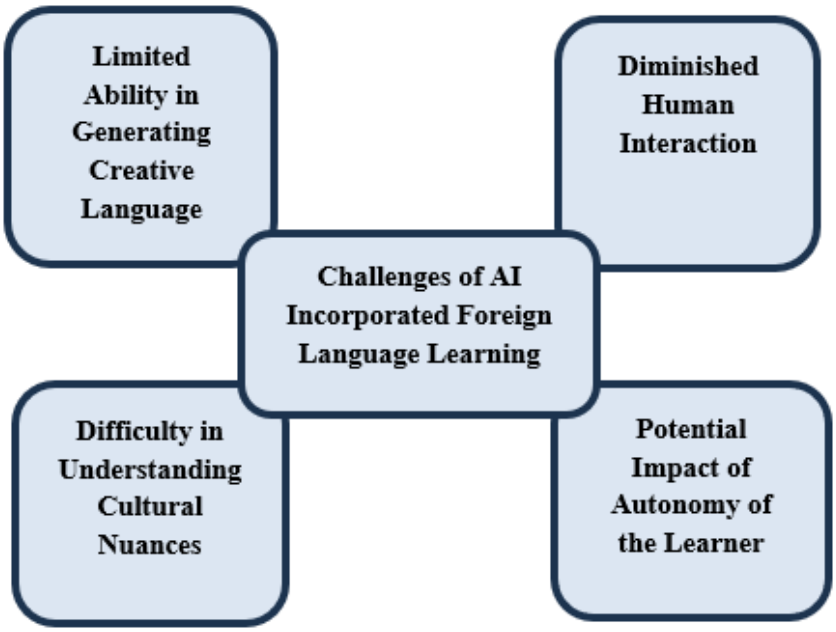

Figure 4. Challenges of AI-incorporated language learning which can be overcome with effective TSR and TI.

This study investigated the role of AI in facilitating teacher immediacy, teacher-student rapport, and students' WTC in ESL classrooms. The findings suggest that AI can effectively support language education by augmenting the overall language learning process. Specifically, AI was found to facilitate teacher immediacy, teacher-student rapport, and students' WTC. Moreover, the study revealed that ESL students' attitudes towards AI intersect with teacher-student rapport and teacher immediacy. Thus, it influences students' WTC. The results of this study have implications for the effective integration of AI in language learning classrooms. It highlights the potential of AI to enhance the language learning experience and promotes more effective teacher-student interactions.

5. Conclusion

The analysis of the collected data shows that AI plays a crucial role in building TSR, TI and WTC. Employing the features of AI in ESL classes can enhance the communication skills of the students and lead to increased level of willingness to communicate. The participants' positive perception of the use of AI in language learning shows that it can act as an effective tool in language learning. It facilitates

language education and provides easy access to standard language learning resources. It also helps to increase the language proficiency of the students and provides access to high-quality language learning materials and resources. It helps to augment overall language learning of ESL students. The results show that the attitudes of the students towards AI, overall teacher-student rapport and TI impact their WTC and language proficiency. Although AI facilitates personalized learning, it is also observed that it poses several challenges. The participants felt the need to increase human interaction in AI assisted language learning environments to a great extent. Moreover, the learners slightly prefer human feedback provided by human teachers rather than the limited feedback provided by AI. The learners also pointed that it is moderately challenging for them to comprehend the ambiguous nature of language with AI assistance alone. It is also observed that the learners struggle moderately in understanding language and cultural nuances in AI only instruction. Moreover, the findings of the study also point out that the challenges of AI-incorporated language learning can be overcome with effective TSR and TI, which ultimately leads to increased WTC.

Despite the significant contributions of the study, the results may be perceived in the light of certain limitations. A total of 222 participants, comprising 50 ESL educators, 165 ESL students, and 7 faculty members who are trained in using AI for English language teaching from diverse higher education institutions across Tamil Nadu and Kerala, contributed to the study's sample. Both teachers and students provided their responses through self-reported subjective assessments. In order to enhance the reliability and validity of future research, more robust and objective evaluation methods could be explored. Moreover, the data collected for the study is confined to two South Indian states namely Tamil Nadu and Kerala. The perception of individuals may differ in different states or countries. Future studies can be done including more regions or countries for greater generalizability. Such a study will pave the way to broader linguistic and cultural contexts. Further studies can also compare different AI-assisted methods and propose innovative pedagogical frameworks. Longitudinal or cross-context comparison can make the research more distinctive. Moreover, further studies can also have a comparative analysis between different educational settings such as online, traditional and blended classrooms.

Author Contributions

Conceptualization, Methodology, Validation, Investigation, Resources, Data curation, Writing the complete research article, Reviewing, Editing, Visualization, Supervision, and Project administration were carried out by Dr. Aby John.

Funding

This research was funded by RUDN University, Moscow, Russia (Project number: 056124-0-000) and Talent Publications, Pvt. Ltd., Kochi – 682035, Kerala, India (as part of a funded project signed on August 12, 2022).

Institutional Review Board Statement

This study is in line with the principles of the Declaration of Helsinki and obtained approval from the institution. Informed consent for participation was obtained from respondents who participated in the study.

Informed Consent Statement

Informed consent for participation was obtained from respondents who participated in the study.

Data Availability Statement

Not applicable.

Conflicts of Interest

There is no conflict of interest.

Appendix A

Questions formulated by the author to conduct the study:

I. Teacher-Student Rapport

Q1. Do you think that AI-powered tools can facilitate personalized feedback and support? Can they enhance teacher-student rapport in ESL classrooms?

Q2. Can AI-driven chatbots or virtual assistants help reduce

teacher workload? Do they allow more time for individualized student interaction and rapport-building?

II. Teacher Immediacy

Q3. In what ways can AI-enhanced video conferencing platforms improve teacher immediacy in online ESL classes? Does it foster a sense of presence and connection?

Q4. How does AI-driven analytics inform teachers about students' learning styles? Does it enable more effective and immediate instructional adjustments?

III. Willingness to Communicate

Q5. Can AI-powered language learning apps or games increase ESL students' willingness to communicate by providing low-stakes, interactive practice opportunities?

Q6. How do AI-driven peer review and feedback systems encourage students to share their ideas and engage in meaningful discussions?

IV. Integration and Effectiveness

Q7. What strategies would you employ to effectively integrate AI tools into your ESL teaching practice to promote teacher-student rapport, immediacy, and willingness to communicate?

Q8. How do you envision assessing the effectiveness of AI-driven interventions on teacher-student rapport, immediacy, and willingness to communicate in your ESL classroom?

References

[1] Niu, L., Wang, X., Wallace, et al., 2022. Digital learning of English as a foreign language among university students: How are approaches to learning linked to digital competence and technostress? Journal of Computer Assisted Learning, 38(5), 1332–1346. DOI: https://doi.org/10.1111/jcal.12679

[2] Zhi, R., Wang, Y., 2024. On the relationship between EFL students' attitudes toward artificial intelligence, teachers' immediacy and teacher-student rapport, and their willingness to communicate. System, 124, 103341. DOI: https://doi.org/10.1016/j.system.2024.103341

[3] Dijo, A.P., Krishnan, K.P., Subheesh, N.P., John, A., et al., 2024. Engineering Educators' Adoption and implementation of Project-Based Learning: Experiences from a South Indian University. In Proceedings of the 2024 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE); Bengaluru, India, 9–12 December 2024. DOI: https://doi.org/10.1109/TALE62452.2024.10834364

[4] Wang, X., Pang, H., Wallace, M.P., et al., 2022. Learners' perceived AI presences in AI-supported Language learning: A study of ai as a humanized agent from community of inquiry. Computer Assisted Language Learning. 37(4), 814–840. DOI: https://doi.org/10.1080/09588221.2022.2056203

[5] John, A., 2024. Gamification in English language teaching: A pathway to fostering teacher-student rapport, teacher immediacy and students' willingness to communicate. XLinguae. 17(4), 47–58. DOI: https://doi.org/10.18355/xl.2024.17.04.04

[6] Jeon, J., 2022. Exploring ai chatbot affordances in The efl classroom: Young learners' experiences and Perspectives. Computer Assisted Language Learning, 37(1–2), 1–26. DOI: https://doi.org/10.1080/09588221.2021.2021241

[7] Wang, Y., Derakhshan, A., & Pan, Z., 2022. Positioning an agenda on a loving pedagogy in second language acquisition: Conceptualization, practice, and research. Frontiers in Psychology, 13, 894190. DOI: https://doi.org/10.3389/fpsyg.2022.894190

[8] Wang, Y., Kruk, M., 2024. Modeling the interaction between teacher credibility, teacher confirmation, and English major students' academic engagement: A sequential mixed-methods approach. Studies in Second Language Learning and Teaching, 14(2), 235–265. DOI: https://doi.org/10.14746/ssllt.38418

[9] Wu, H., Wang, Y., & Wang, Y., 2024a. How burnout, resilience, and Engagement Interplay among EFL learners? A mixed-methods investigation in the Chinese senior high school context. Porta Linguarum. (IX), 193–213. DOI: https://doi.org/10.30827/portalin.viix.29878

[10] Shahzad, M.F., Xu, S., Naveed, W., 2023. Investigating the impact of artificial intelligence on human resource functions in the health sector of China: A mediated moderation model. Heliyon. 9(11). DOI: https://doi.org/10.1016/j.heliyon.2023.e21818

[11] Wu, H., Wang, Y., Wang, Y., 2024. What do we know about L2 teachers' emotion regulation? A bibliometric analysis of the pertinent literature. Forum for Linguistic Studies. 5(3), 2012. DOI: https://doi.org/10.59400/fls.v5i3.2012

[12] Li, C., Chen, H., 2023. Cultural psychology of english translation through Computer Vision-based robotic interpretation. Learning and Motivation, 84, 101938. DOI: https://doi.org/10.1016/j.lmot.2023.101938

[13] Hu, L., Wang, Y., 2023. The predicting role of EFL teachers' immediacy behaviors in students' willingness to communicate and academic engagement. BMC Psychology, 11(1). DOI: https://doi.org/10.1186/s40359-023-01378-x

[14] Li, S., Wu, H., Wang, Y., 2024. Positive emotions, self-regulatory capacity, and EFL performance in the Chinese senior high school context. Acta Psychologica,

243, 104143. DOI: https://doi.org/10.1016/j.actpsy.2024.104143

[15] Wang, M., Wang, Y., 2024. A structural equation modeling approach in examining Efl students' foreign language enjoyment, trait emotional intelligence, and classroom climate. Learning and Motivation, 86, 101981. DOI: https://doi.org/10.1016/j.lmot.2024.101981

[16] Wang, Y., Derakhshan, A., Pawlak, M., et al., 2024. Exploring the psychometric properties of the grammar learning strategy inventory in the chinese EFL context. Studies in Second Language Learning and Teaching, 14(3), 515–543. DOI: https://doi.org/10.14746/ssllt.39357

[17] John, A., 2021. A sociolinguistic perspective on the increasing relevance of the English language: A study conducted among youngsters. International Journal of English Language and Literature Studies, 10(1), 11–21. DOI: https://doi.org/10.18488/journal.23.2021.101.11.21

[18] Guo, Y., Wang, Y., Ortega-Martín, J.L., 2023. The impact of blended learning-based scaffolding techniques on learners' self-efficacy and willingness to communicate. Porta Linguarum Revista Interuniversitaria de Didáctica de Las Lenguas Extranjeras. (40), 253–273. DOI: https://doi.org/10.30827/portalin.vi40.27061

[19] Lee, J.H., Shin, D., Noh, W., 2023. Artificial Intelligence-based content generator technology for young English-as-a-foreign-language learners' reading enjoyment. RELC Journal. 54(2), 508–516. DOI: https://doi.org/10.1177/00336882231165060

[20] Pan, Z., Wang, Y., Derakhshan, A., 2023. Unpacking chinese EFL students' academic engagement and psychological well-being: The roles of Language Teachers' affective scaffolding. Journal of Psycholinguistic Research. 52(5), 1799–1819. DOI: https://doi.org/10.1007/s10936-023-09974-z

[21] Dakakni, D., Safa, N., 2023. Artificial Intelligence in the L2 classroom: Implications and challenges on Ethics and equity in Higher Education: A 21st century pandora's box. Computers and Education: Artificial Intelligence, 5, 100179. DOI: https://doi.org/10.1016/j.caeai.2023.100179

[22] Lee, S., Jeon, J., 2022. Visualizing a disembodied agent: Young EFL Learners' perceptions of voice-controlled conversational agents as language partners. Computer Assisted Language Learning, 37(5–6), 1048–1073. DOI: https://doi.org/10.1080/09588221.2022.2067182

[23] John, A., Anna, Levshits., 2024. Enhancing language and linguistic proficiency through Project-Based Learning: A Study from South India. Forum for Linguistic Studies, 6(5), 326–335. DOI: https://doi.org/10.30564/fls.v6i5.7141

[24] John, A., George, E., 2024. The impact of social media and electronic literature on literary studies, Language Learning and Acculturation: A study conducted in South India. World Journal of English Language, 14(4), 546. DOI: https://doi.org/10.5430/wjel.v14n4p546

[25] Fathi, J., Rahimi, M., Derakhshan, A., 2024. Improving EFL learners' speaking skills and willingness to communicate via artificial intelligence-mediated interactions. System, 121, 103254. DOI: https://doi.org/10.1016/j.system.2024.103254

[26] Taherian, T., Shirvan, M. E., Yazdanmehr, E., 2023. A longitudinal analysis of informal digital learning of English, willingness to communicate and foreign language boredom: A latent change score mediation model. The Asia-Pacific Education Researcher, 33(4), 997–1010. DOI: https://doi.org/10.1007/s40299-023-00751-z

[27] Fathi, J., Pawlak, M., Mehraein, S., et al., 2023. Foreign language enjoyment, ideal L2 self, and intercultural communicative competence as predictors of willingness to communicate among EFL learners. System, 115, 103067. DOI: https://doi.org/10.1016/j.system.2023.103067

[28] Marzuki, Widiati, U., Rusdin, D., 2023. The impact of AI writing tools on the content and organization of students' writing: EFL teachers' perspective. Cogent Education, 10(2). DOI: https://doi.org/10.1080/2331186x.2023.2236469

[29] Etikan, I., Musa, S.A., Alkassim, R. S., 2016. Comparison of convenience sampling and purposive sampling. American Journal of Theoretical and Applied Statistics, 5(1), 1. DOI: https://doi.org/10.11648/j.ajtas.20160501.11

[30] Gruener, S., 2022. Determinants of gullibility to misinformation: A study of climate change, covid-19 and Artificial Intelligence. Journal of Interdisciplinary Economics, 36(1), 58–78. DOI: https://doi.org/10.1177/02601079221083482

[31] Kim, J., Im, I., 2023. Anthropomorphic response: Understanding interactions between humans and artificial intelligence agents. Computers in Human Behavior, 139, 107512. DOI: https://doi.org/10.1016/j.chb.2022.107512

[32] Tang, J., 2023. Artificial Intelligence-based needs analysis for English specific purposes in digital environment. Learning and Motivation, 83, 101914. DOI: https://doi.org/10.1016/j.lmot.2023.101914

[33] Aswin, A., Anzar, S.M., Subheesh, N. P., & John, A., 2024. Enhancing Electronics Education through Augmented Reality and Automated Circuit Verification: A Comprehensive Workflow Design. 2024 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE). 9–12, December, 2024. Bengaluru, India. pp. 1–8. DOI: https://doi.org/10.1109/TALE62452.2024.10834354

[34] Burke-Smalley, L., Neely, A.R., Bryant, E., 2024. Building professor-student rapport: A model, survey findings, and implications for practicing professors.

Business Horizons. 67(2), 137–145. DOI: https://doi.org/10.1016/j.bushor.2023.11.003

[35] Akshay, R.S., Sunny, A., V S, S., John, A., et al. 2024. Engineering students' attitudes and perceptions towards Project-Based Learning: A Study from Kerala, Southern India. 2024 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE). 9–12, December, 2024. Bengaluru, India. pp. 1–5. DOI: https://doi.org/10.1109/tale62452.2024.10834355

[36] Dewaele, J.-M., Pavelescu, L.M., 2019. The relationship between incommensurable emotions and willingness to communicate in English as a foreign language: A multiple case study. Innovation in Language Learning and Teaching, 15(1), 66–80. DOI: https://doi.org/10.1080/17501229.2019.1675667

[37] John, A., 2025. Revolutionizing STEAM Education: Harnessing the Power of AI and Digital Technology to Deliver Personalized Learning Experiences. In Integrating Personalized Learning Methods Into STEAM Education. essay. IGI Global Scientific Publishing: Hershey, PA, USA. pp. 143–168.