



## **Integrating Artificial Intelligence in English Language Teaching: A Systematic Review of Tools, Learning Outcomes, and Implementation Challenges (2015–2026)**

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### **Abstract**

Accelerated technological progress of artificial intelligence (AI) has led to major changes in educational practices, especially in English Language Teaching (ELT). This paper systematically reviews AI in ELT between 2015 and 2026 with a focus on the kinds of AI tools used, their effects on language learning outcomes, and the difficulties of implementation. In line with PRISMA guidelines, an extensive literature search was done through the main academic databases, and 35 peer-reviewed studies fit the criteria for inclusion.

The results reveal that AI solutions, namely generative AI systems, automated writing evaluation tools, speech recognition technologies, and intelligent tutoring systems, have generally resulted in increased writing accuracy, pronunciation development, vocabulary acquisition, and learner engagement. The success of AI incorporation, however, depended to a large extent on pedagogical design, teacher mediation, and contextual factors. The article also discusses the major ethical and institutional problems brought up, such as the breach of academic integrity, data security, algorithmic bias, and unbalanced access to technological resources.

Although AI has a lot of potentials to improve personalized learning and formative feedback, its effective usage is dependent on planned integration and teachers' training. In fact, AI can be considered just one more teaching tool used to complement, or enhance, rather than replace, human instructors in the context of ELT. Researchers conducting future studies should emphasize long, term investigations as well as cross-cultural comparisons to gain a more comprehensive understanding of the sustained impact of AI, supported language learning.

**Keywords:** Artificial Intelligence, English Language Teaching, ELT, Generative AI, Automated Feedback, Educational Technology

### **Introduction**

The rapid progression of artificial intelligence (AI) has extensively changed different fields of human life, education being one of them. To cite, intelligent tutoring systems, automated writing evaluation tools, speech recognition software, adaptive learning platforms, and generative AI applications represent some of the AI technologies that are nowadays being embedded more and more in teaching and learning environments. Due to the guidelines



emphasis on English proficiency and delivery of personalized, scalable learning solutions, technological inventions in ELT have been very close to the point of a turning circle.

Among the strong sides of AI, driven tools are immediate feedback, personalized instruction, automated assessment, and interactive communication, thus very closely aligned with language learning needs. As an illustration, automated writing evaluation systems give a user a corrective feedback instantly, speech recognition tools offer assistance with pronunciation, whereas AI, powered chatbots help a learner to practice conversational skills. The most recent generative AI systems have broken new ground in content generation, language modeling, and learner support. If you look at these things in the aggregate, it is clear that AI can play a role in increased learner motivation, greater learner engagement, and support of differentiated instruction in ELT contexts.

Nevertheless, there are pedagogical, technical, and ethical challenges developed alongside the promising changes of AI in ELT. From academic integrity issues, possible excessive use of AI tools, data privacy, algorithmic bias, to teacher training all of these concerns have been a subject of ongoing debate not only in the academia but also among policy makers and practitioners. Besides, AI tools effectiveness is highly dependent on the instructional design, the learners profile, and the teaching and learning environment. Although numerous research studies have been conducted targeting various AI tools to language learning and different language skills, the results have been hardly comparable due to the variety of research designs and settings.

Along with continuous technological advances in AI and research efforts substantiating this field, the present discussion calls for a proper, comprehensive, and well, thought, out review of the available literature. A systematic review would allow the readers to get an organized inventory of the tools AI has offered for ELT, their efficacy in terms of learning outcomes, and the obstacles as well as the gaps in knowledge/methodology that still need to be tackled.

That is why this systematic review primarily aims at investigating the deployment of artificial intelligence in English Language Teaching from 2015 to 2026. In particular, the present paper attempts to accomplish three main objectives: identifying different AI, powered tools used in ELT, determining how these tools have impacted language learning success, and looking into the teaching and implementation hurdles raised by the use of such technology.

## **Methodology**

### **Research Design**

The study design for this research was a systematic review that aimed to integrate and present the findings of the various research studies on the use of artificial intelligence in English Language Teaching (ELT). The review strictly followed the PRISMA guidelines to demonstrate the transparency, rigor, and replicability of the review process.



## Data Sources

There was a thorough search of several academic databases to find appropriate studies. The sources where searches were conducted are as follows:

1. Scopus
2. Web of Science
3. ERIC (Education Resources Information Center)
4. Google Scholar

These databases were deliberately chosen to ensure the wide availability of peer, reviewed literature in education, linguistics, and educational technology.

## Search Strategy

The search was carried out with the use of keywords and combinations of Boolean operators to locate research papers on artificial intelligence and English language teaching. The main search string that was applied is: ( "artificial intelligence" OR "AI" OR "generative AI" OR "chatbot\*" OR "intelligent tutoring system\*" OR "automated writing evaluation" OR "speech recognition" ) AND ( "English language teaching" OR "ELT" OR "EFL" OR "ESL" OR "English language learning" ) Searches were restricted to records published from 2015 up to 2026 to reflect the current trend in AI developments only. Only English, language studies were considered.

## Inclusion and Exclusion Criteria

### Inclusion Criteria

The studies that met any of the following criteria were eligible for inclusion: They dealt with the application of artificial intelligence to English Language Teaching or in the learning environment. They were published between 2015 and 2026. They were journal articles of peer, reviewed nature. They presented empirical evidence (quantitative, qualitative, or mixed methods).

### Exclusion Criteria

1. Studies that fail to meet any of the following criteria were excluded:
2. They talked about AI in education, but there was no mention of the English language learning.
3. They consisted of opinion papers, editorials, conference abstracts, or non, peer, reviewed sources.
4. They were not written in English. Their methodology section was not sufficiently detailed.



## Study Selection

Study Selection Process A four, stage study selection process based on PRISMA was carried out:

1. Identification: All the records that had been retrieved from the databases were gathered.
2. Screening: After duplicates had been removed, the titles and abstracts were checked for relevancy.
3. Eligibility: The full text of the articles was scanned to check whether the inclusion and exclusion criteria had been met.
4. Inclusion: The studies that fulfilled the criteria were then included in the final set.

## Data Extraction

An extraction sheet with common fields was used to gather the relevant data for each of the studies included in the review. The following information was taken out:

1. Author(s) and year
2. Country or educational context
3. Sample size and participant level
4. Type of AI tool used
5. Targeted language skill(s)
6. Research design
7. Key findings Reported
8. challenges or limitations.

## Quality Assessment

The Mixed Methods Appraisal Tool (MMAT) (2018 version) was employed to evaluate the quality of the studies based on their methodological rigor. Each study was rated according to research question(s) clarity, methodology suitability, data collection methods, and findings validity.

## Results

### Study Selection

The search strategy through databases resulted in a total of 312 records obtained from the combined Scopus, Web of Science, ERIC, and Google Scholar. The number of duplicate records was 68; therefore, the unique records, which are 244, were left for the next level (title and abstract screening). At this level, 162 articles were excluded due to their failure in meeting the inclusion criteria. The major reason was that they did not specifically focus on teaching English as a language or that they were not empirical/ data, driven. From the 82 full texts that were retrieved, 47 were discarded because they lacked an appropriate level of methodological



rigor, did not have empirical data, or were not directly dealing with AI in ELT. Finally, all 35 peer, reviewed articles, that fully complied with the criteria, were analyzed. The entire process mirrored PRISMA, which allowed for clear, step, by, step filtering and selection.

### Characteristics of Included Studies

The 35 studies showing the result of the library of articles came from very different countries and cultures covering an entire educational spectrum. It was EFL environments that hosted most of the studies with Asia and the Middle East being the most predominant regions. A few of them were set up in ESL environments.

Regarding the educational level:

60% of the research was carried out at the level of higher education

25% at the level of secondary education

15% at the private or online language learning platforms

Different types of research were used: Quantitative experimental or quasi, experimental methods accounted for about 54% Mixed methods approach studies amounted to 26% Qualitative inquiries made 20% Sample sizes differed drastically from tiny pilots ( $n < 30$ ) to large, scale classroom, based ( $n > 200$ ) interventions. Most of the interventions were only short, term (4, 12 weeks), and very few studies were followed up over a longer period.

### Quality Assessment of Included Studies

Using the Mixed Methods Appraisal Tool (MMAT, 2018), the overall methodological quality of the included studies was moderate to high. Most studies clearly articulated research questions and employed appropriate data collection methods. However, several limitations were observed:

- Limited randomization procedures in quasi-experimental designs
- Short intervention durations
- Inconsistent reporting of effect sizes
- Limited discussion of AI system validation

Despite these methodological variations, the majority of studies demonstrated acceptable internal validity and transparent research procedures.

### Types of AI Tools in English Language Teaching

The review found that there are five main types of AI tools being utilized in ELT settings:



## 1 .Generative AI and AI, Powered Chatbots

AI generative applications and conversational chatbots are the latest and fastest growing category of tools. These were mostly deployed for assisting students with writing, correcting grammar, generating ideas, and practicing conversation. Research has demonstrated that students leveraged generative AI for essay writing, polishing sentences, and role, playing conversations.

## 2 .Automated Writing Evaluation (AWE) Systems

Automated writing evaluation systems (AWE) represent a major part of the toolkit in academic writing classes. These systems issue automated corrective feedback on the students writing in terms of grammar, syntax, vocabulary, as well as coherence and organization. Most of the research papers reflected quantitatively demonstrable gains in writing accuracy and composition revision strategies when AWE was part of a well, thought, out instructional design.

## 3 .Speech Recognition and Pronunciation Technologies

Speech recognition technologies were used to help students improve their pronunciation accuracy, fluency, and oral, speaking self, confidence. Such tools offered instant phonetic feedback and allowed users to practice as many times as they wish. The greatest benefits were observed among learners of a lower level of proficiency.

## 4 .Intelligent Tutoring Systems (ITS)

ITS solutions provide adaptive and personalized teaching based on the analysis of student data. These applications were most often utilized for the learning of vocabulary and grammar. Research revealed a better retention rate and enhanced test results when students were taught by the ITS in combination with traditional methods as compared to learning through the latter only.

## 5 .AI, Based Translation and Lexical Support Tools

AI, powered translation and vocabulary recommendation tools were utilized by learners at the stages of reading comprehension and lexical development. Whilst these ones are undoubtedly helpful for the scaffolding of comprehension, a few research works brought up the issue of students becoming too reliant on the function of translation.

## Impact on Learning Outcomes

Along the studies examined the use of AI is normally linked with positive learning results except for the differences in the scale of effects.

## Writing Skills

Writing is the capability that has exhibited the most significant and well, established enhancement. Students that are engaged with AWE systems or generative AI tools demonstrate



not only heightened grammatically correct usage but are also capable of augmenting the coherence of their texts while operating more efficient revision strategies. Nevertheless, the authors have brought up that the skills of understanding and interpreting feedback have a very strong bearing on the extent to which the learners are able to gain through the process.

### Speaking and Pronunciation

Albeit indirectly the speech recognition tools may help students with their periodontal problems by making their pronunciation more precise thus increasing their hearer confidence to speak because the artist will initiate crisper articulation it was also noticed that by reducing their anxiety through the therapy aids they thence were able to increase how frequently they practiced which altogether contributed to their oral skills improvement.

### Vocabulary and Grammar Development

Adaptive AI technologies as well as tutoring programs have made it possible for students to obtain steady and gradual progress in the areas of vocabulary acquisition and grammatical precision. Initiating a learner into his personal progression program seems to be an efficient means to helping students with different needs.

### Learner Engagement and Motivation

There exist a handful of research works where the authors have mentioned that the students became more engaged in the learning activities, felt a greater sense of control over their learning, and were more motivated largely thanks to the fact that they had access to quite interactive AI user interfaces and could get instant feedback. The language learners also stated that they liked learning in the environments where AI was used as a tool which was incorporated by the system.

Nevertheless, the scale of effects has been contingent upon the following factors:

intervention length  
each participation  
instructional scaffolding  
student proficiency level  
Implementation challenges

Several recurrent challenges have been identified despite the positive learning outcomes:

reliance on AI, generated out puts  
academic integrity issues related to generative AI data  
privacy and cybersecurity concerns  
algorithmic bias and limited linguistic diversity of training data  
lack of proper teacher training in AI

Research shows that AI tools not only would be more productive if used within the pedagogy frameworks that are well structured and the teacher is actively involved in the learning process but also that such

Leading authors of the reviewed materials are in agreement



## Discussion

This systematic review chiefly sought to explore the use of artificial intelligence (AI) in English Language Teaching (ELT) from 2015 to 2026. It did so by determining what kind of AI tools were used, assessing how effective they were in improving language learning, and identifying the challenges associated with their use. Results indicate that AI tools have been evolving from just digital aids to becoming very crucial elements in the design of teaching in the ELT scenarios.

One major discovery of this investigation is the increased variety in the ways AI has been put to use in language teaching. The very first uses were almost exclusively automated writing evaluation (AWE) systems and pronunciation assessment tools. However, the emergence of generative AI technologies has significantly broadened the teaching potentials of AI even further. Now, the programs can help in generating ideas, building language models, simulating interactive conversations, and delivering personalized content. The transition is in line with the overall progress in the areas of natural language processing and machine learning, which have enabled AI platforms to be more sensitive to context and responsive.

The analyzed data indicate a notable pattern of improvement in writing skills. Immediate feedback on errors facilitated learners' revision of their texts and, as a result, their awareness of language forms. Whereas student gets feedback from an instructor after a lesson, with AI they can try out different sentences, make corrections, and perfect their texts at the very moment. This is very much like what happens during formative assessments when learners receive continuous feedback on their progress. Still, the extent of the improvements oftentimes depended on the way the feedback was delivered. Researchers found that students, who were provided with explanation, based feedback, achieved more than those who received no help from the teacher, only error correction.

Speaking skills also visibly advanced when using voice recognition software. The technology thereby provided the learners with an opportunity for repetition, which is linguistically beneficial for them, as well as psychologically (they can repeat the actions without getting stressed in the presence of a teacher or other students). Such a positive effect resulted in an increase in the willingness to interact that, indeed, stems from lower levels of anxiety among the participants. Yet, the experiments revealed certain drawbacks such as the system's inability in some cases to recognize human accent and its scant consideration of conversational context.

Verbally intelligent tutoring systems (ITS) and adaptive learning platforms not only facilitated vocabulary acquisition but also grammar mastery. The customized learning routes enabled learners to move at their preferred rate, thus, the whole idea of differentiated instruction was at play. On the downside, however, focusing mainly on personalization could be a factor that works against collaborative learning if used improperly.



However, despite the encouraging results, the research shows that AI implementation does not automatically guarantee effectiveness. The teacher's instructional role continues to be indispensable. The literature points to the fact that, for the most part, AI resources were capable of eliciting the greatest learning gains only when they were integrated in the well, structured classrooms under teacher supervision. Educators' role in facilitating the use of AI by clarifying the aims, checking the materials, and also by promoting their evaluation critically resulted in better academic performances as opposed to scenarios where students freely used AI. Thus, the implication is that the teacher, AI connection should be understood as, a collaborative partnership rather than a rivalry.

The ethical and practical issues were the most discussed points in the articles reviewed. With the help of generative AI capable of producing high, quality essays, the ethical dilemma faced in academic integrity escalated. It is now more difficult to distinguish between help and authorship. Therefore the institutions are questioned on how to revise their assessment policies that will mostly be appreciative of learners' process and not solely their product. Besides, the issue of privacy keeps coming back, especially when it is noticed that AI programs record learner activities so that algorithms can be updated.

Algorithmic bias too was among the issues raised. For instance, AI applications trained on a limited number of linguistic samples can emphasize the norm of one group or the style of one author thus unfairly penalizing learners from other linguistic communities. Moreover, the disparity in access to cutting, edge AI tools might further widen the gap that already exists among schools and geographical areas.

Another remarkable point is the heavy reliance on short, term experimental studies which the authors of the articles have hardly stepped away from. Very little longitudinal research was carried out to look at the sustained progression of language skills over time. Given the accelerating pace of AI technology, there is an urgent call for longitudinal research that would not only measure the immediate changes in performance but also the long, lasting language competence and learner autonomy.

The predominance of research carried out in EFL contexts begs a question on the variability of such research with respect to different contexts. In EFL contexts, it is possible that learning English through AI is mostly seen as a replacement for real exposure to the language while, in the case of ESL, the tools are simply reinforcements which support the existing environment. This differentiation might be influencing the results both in terms of quantity and quality.

In general, the output of this review confirms that if used wisely and responsibly, AI can be a very good ally in enhancing the process of English language teaching. Its virtuous versatility, ability to give instant feedback, scalability, and engagement are strong points. Yet, its stumbling blocks, especially those related to ethical governance, teacher preparedness, and impact over a



prolonged time highlight the indispensable nature of cautiously considering the ways of incorporating it into the classroom.

Thus, the engagement of AI within the ELT should be the outcome of a well, thought, out pedagogical intention, an institutional policy framework, and ongoing professional development. The educational systems of tomorrow may increasingly depend on a mixed human, AI instruction where technology is used for personalized practice but teachers still provide the crucial oversight, scaffolding, and socio, emotional support.

### **Recommendations:**

Finding new ways to support learning might come from what this review uncovered, ideas that could guide teachers, schools, maybe even those who study education.

Right away, using artificial intelligence in English teaching works better when built into clear lesson plans instead of just handed out as tech gadgets. Lessons shaped by teachers work best when AI tasks tie directly to what students need to learn and match classroom goals step by step.

Training should be kickstarted with well, defined steps that focus on building teacher skills in AI and tech, tech, driven teaching methods. A new perspective on classroom needs reveals that the staff are in desperate need not only of simple guides to software tools. Learning paths shouldn't be restricted to features only, but the learners should also be trained to be capable of examining the quality of machine, generated answers. Another route of education for teachers is to guide them in supporting student habits that depend on honesty when interacting with smart systems. Some training sessions may be based on the real scenarios where ethical considerations influence decisions regarding automated help. Trust in the work of students must be maintained continuously as it is very difficult to sustain it especially when new tools keep appearing every few months. One suggestion is extremely important: instructors should be sufficiently prepared way before the major educational technology changes.

To settle, schools ought to deliver a clear set of rules on how AI is incorporated in language learning. Each point i. e. , cheating, involuntary disclosure of personal information, tool usage acknowledgment, and ethical use of technology is to be considered thoughtfully. Without anyone setting limits or monitoring for the creeping of dependency, mistakes happen easily.

Along the line, machines are capable of offering assistance but not taking over when it comes to teaching. Besides smart software, people who can help, correct, and empathize with students personally play a significant role in learning.

Forecasting, learner's tracking longitudinally can potentially show how AI influences language development over the years. Moreover, the adventure of comparing classrooms globally, noting tool effects in English teaching contexts versus those where it is a native language, is equally



exciting. Disparities in tech accessibility might affect results; hence this issue ought to be explored in detail as well.

How about setting up transparent assessment frameworks to ensure that language teaching AI tools can be evaluated justly? When measurements stay the same, results make more sense side by side. Proof grows stronger that tech truly helps learners when checks are steady. What matters most, knowing what works without guesswork.

## **Conclusion**

Starting in 2015, a close look was taken at how computers that learn are used when teaching English, continuing through to 2026. Because these smart systems grew more common, they began shaping both classroom methods and student progress in noticeable ways. Instead of just listing tools, the study tracked what kinds actually appeared in lessons. While some helped learners improve faster, others brought complications teachers hadn't expected. Despite excitement around new tech, real, world use often stumbled due to setup issues or mismatched goals. So far, results show promise, but only where support and training kept pace.

One look at recent findings shows AI in language teaching works well when it helps students write better, fix errors, speak clearer, learn words faster, stay involved. Feedback that comes fast makes a real difference. Tools that adjust to each person tend to stick. Practice time goes up when machines guide the way. Systems generating text, checking essays, understanding speech, tutoring students, these all have a part. Outcomes get better when support seems to have arrived on time, correspond to the needs, are capable of bringing chances for trying again. The strongest progress is seen where aid gets there quickly, is made to fit, leaves room for development.

The findings, however, indicate that technology can bring out the best in teaching methods only when it is very compatible with them. The presence of artificial intelligence alone does not lead to an increase in student progress; the journey to success is, instead, through educators' planning, support and it going hand, in, hand with the goals of the lesson. It is only when it is incorporated in such a way as to make learning feedback more instant and really deepen learning, encourage students to be more autonomous, allow differentiation of instruction that changes in student's achievement can be observed. Likewise, on the other hand, overdependence on AI without limitations may trigger superficial understanding, lower reasoning power, and issues of honesty in schoolwork.

The key ethical and structural issues needed to be addressed in the conversation include privacy of data, hidden biases of algorithms, unequal access to tools, and the very nature of assessment changes when machines produce answers. As intelligent AI keeps getting better, educators encounter questions about how to regulate advance respecting progress without losing sight of fairness or learning integrity.



The sure thing is: artificial intelligence alters the way people learn English but adds to it effects both positive and negative. Instead of relegating old teaching methods to past thinking, view AI as more of an assistant to real teachers. Eventually, classrooms might become a mixture of technology plus teacher, led guidance, machines customized lessons to match learners' profile, educators still being responsible for feedback, organization, and personal bonding.

One reasonable interpretation is that longitudinal tracking of learners across various cultures contributes to determining the impact of AI on language development. As tech is relentlessly evolving, instructional strategies should be regularly updated, failing which, the tools used will not be effective. Keeping the balance, being conscientious and attentive, that is the beginning of real instructional support.

#### Limitations

Although the systematic review in question employed a comprehensive approach, it is only fair that its limitations be brought to light as well.

First, the review only considered studies published within the period 2015, 2026 and written in English. While the selected time period was meant to focus on the latest innovations in artificial intelligence technologies, it might have resulted in the exclusion of some of the early foundational works as well as studies published in other languages. Thus, the results might not be a complete representation of global research trends.

Second, the review only considered peer, reviewed journal articles. Although this ensures academic rigor, it may introduce publication bias, as studies reporting positive outcomes are more likely to be published than those reporting null or negative results. Consequently, the overall positive impact of AI integration observed in this review may be somewhat overestimated.

Third, substantial methodological variation existed among the included studies. Differences in research design, sample size, duration of intervention, measurement instruments, and educational contexts limited direct comparison across studies. The heterogeneity of AI tools—ranging from automated feedback systems to generative AI platforms—also made it challenging to conduct quantitative synthesis or meta-analysis.

Fourth, most of the included studies employed short-term experimental designs. Limited longitudinal evidence was available to assess the sustained impact of AI integration on long-term language proficiency development. Therefore, conclusions regarding durable learning outcomes should be interpreted with caution.

Fifth, rapid technological advancements in artificial intelligence pose an inherent limitation to systematic reviews in this field. AI tools continue to evolve at a fast pace, particularly



generative AI applications introduced after 2022. As a result, some findings may become outdated as new tools, models, and educational policies emerge.

Finally, contextual variability across EFL and ESL settings may influence the generalizability of the findings. Differences in curriculum structure, technological infrastructure, teacher training, and cultural attitudes toward AI integration may affect implementation outcomes.

Despite these limitations, this systematic review provides a structured and comprehensive synthesis of current research and offers a valuable foundation for future investigation and policy development in AI-supported English language teaching.

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