

AI AS ASSISTANT OR SUBSTITUTE? NEGOTIATING LEARNER AUTONOMY AND TECHNOLOGICAL DEPENDENCE IN AI-MEDIATED ENGLISH LANGUAGE LEARNING

Nargis Fatima^{*1}, Huma Mirza², Kainat Lohana³

^{*1}Center of English Language and Linguistics, Mehran University of Engineering Technology, Jamshoro

²Assistant Professor, Government Degree College for Women, Nazimabad, Karachi, Sindh, Pakistan

³PhD Scholar, Institute of English Language and Literature, University of Sindh, Jamshoro

^{*1}nargis.fatima@faculty.muett.edu.pk

DOI: <https://doi.org/10.5281/zenodo.22806202>

Keywords

Stress, Work-Life Balance,
Emotional Intelligence,
Ambulance personnel, Paramedics

Article History

Received: 01 June 2026
Accepted: 23 August 2026
Published: 08 September 2026

Copyright @Author

Corresponding Author: *
Nargis Fatima

Abstract

Generative artificial intelligence (AI) is increasingly becoming part of how students learn English, offering immediate explanations and opportunities to practice beyond the classroom. Yet, the convenience of these tools raises a growing concern. This study explores how university-level English as a Second Language (ESL) learners negotiate this boundary in their everyday use of generative AI for English language learning. Guided by learner autonomy and Oxford's Strategic Self-Regulation (S2R) Model, the study views learners as active decision-makers who plan, monitor, evaluate, and regulate their learning while interacting with AI. Although recent studies have examined students' acceptance, perceptions, and learning outcomes associated with generative AI, less is known about how learners experience the tension between technological assistance and dependence, particularly in Pakistani higher education. A qualitative multiple-case study will therefore be conducted with 25 university ESL learners purposively selected from higher education institutions in Pakistan. Data is generated through semi-structured interviews and examined using reflexive thematic analysis. The study shows that learners move between using AI as a source of scaffolding. The study seeks to extend current understanding of AI-mediated language learning by highlighting how learner autonomy can be both supported and challenged by the same technology, with implications for more critical and responsible use of AI in English language education.

1. INTRODUCTION

Generative artificial intelligence (AI) has quickly moved from being an innovative technological development to becoming part of students' everyday learning practices. For university students learning English, tools such as ChatGPT can now

provide explanations, suggest vocabulary, correct language, generate examples, and simulate communication opportunities within seconds. These possibilities are particularly significant for learners who have limited opportunities to

interact with English outside the classroom. Rather than waiting for teacher feedback or depending entirely on classroom instruction, learners can seek assistance whenever they encounter a linguistic difficulty. In this sense, generative AI has the potential to make English learning more flexible, personalized, and accessible.

Studies found that the technology was being used for self-directed language learning, content generation, and a range of teaching and learning activities (Li et al., 2024). Similarly, Lo et al. (2024) studied ChatGPT use in ESL education. It highlighted personalized learning, and learner support among its major affordances. At the same time, they noted concerns about inaccurate information, academic dishonesty, and privacy, while also observing that research had concentrated heavily on writing and that other dimensions of language learning remained comparatively underexplored.

This question becomes particularly important when generative AI is considered in relation to learner autonomy. Autonomous learning does not mean learning without assistance; rather, it involves learners taking an active role in deciding what they need to learn, how they will approach a task, how they will monitor their progress, and how they will evaluate the quality of what they have learned. AI can potentially strengthen these processes by giving learners immediate resources and feedback. A student who repeatedly asks AI to produce answers, rewrite assignments, translate every difficult passage, or make decisions without checking the generated response is engaging with the technology in a substantially different way.

Mohebbi (2025), in a systematic review of AI and learner independence in language education, argues that AI tools can create opportunities for independent and self-regulated learning while also raising questions about how much responsibility learners retain during the process. Likewise, Tram et al. (2024) found that EFL learners use ChatGPT for self-directed English learning across areas such

as reading, writing, vocabulary, and grammar, with trust, interactivity, enjoyment, and perceived usefulness influencing continued use. These findings are encouraging, but they also raise a more difficult question: does frequent and convenient access to AI necessarily produce more autonomous learners, or can it gradually encourage reliance on the technology?

This distinction between assistance and dependence is central to this current study. The concern is not that students use AI, nor that AI should be excluded from language learning. Instead, the concern is what happens when technological convenience begins to replace the effort that is necessary for learning. Recent evidence illustrates why this issue deserves closer attention. A meta-analysis of experimental studies found that ChatGPT can improve academic performance, affective-motivational outcomes, and higher-order thinking, but it also reported reduced mental effort and called for greater attention to long-term effects and more demanding assessments (Deng et al., 2025).

Research specifically concerned with autonomy also presents a more complex picture. For example, Xu and Liu (2025) examined AI-supported English learning in relation to motivation, enjoyment, critical thinking, and autonomy, highlighting the potential of AI-mediated learning environments to support learner development. Similarly, research with Indonesian ESP students found a moderate relationship between ChatGPT use for independent English learning and learner autonomy, suggesting that students with greater autonomy may also be more frequent users of ChatGPT for independent learning (2025).

The recent shift toward examining the quality of learners' engagement with AI is particularly relevant to the present study. For example, Hamamra et al. (2026) examined AI literacy and mediated learner autonomy among university EFL writers in Palestine and emphasized that autonomy in AI-supported learning is shaped by

learners' ability to engage critically with AI rather than simply accepting its outputs. This regional evidence is especially relevant because it demonstrates that the autonomy question is not confined to Western or highly technologically developed educational settings. Similarly, recent research in Pakistan has begun to examine the use of generative AI for personalized English learning. Nawaz et al. (2026), for example, reported that learners in an English language programme at the National University of Modern Languages used generative AI to obtain individualized support and immediate feedback.

1.2. Context of the Study

The Pakistani higher-education context provides an important setting in which to investigate these issues. English continues to play a significant role in university education, academic communication, and students' future professional opportunities. At the same time, students' access to English-language interaction and individualized support is not always equal. Generative AI potentially changes this situation by giving learners an easily accessible source of linguistic assistance outside formal classroom settings. Students can ask questions privately, request explanations repeatedly, practise language without fear of embarrassment, and receive immediate responses. In a context where students are increasingly able to obtain complete answers from AI systems, the boundary between learning with AI and letting AI do the learning work can become difficult to identify. This is particularly important for English language learning because many learning processes require sustained cognitive and communicative engagement. Writing, for instance, is not simply the production of a grammatically correct text; it also involves generating ideas, organizing arguments, selecting appropriate language, revising, and making decisions about meaning and audience.

The existing research also suggests that this issue requires further investigation. Lo et al. (2024)

found that 67.1% of the empirical studies they reviewed were conducted in higher education, yet 41.4% focused specifically on writing, while only a small proportion examined speaking and very few addressed listening. Their review also showed that most studies were relatively short in duration and relied heavily on self-reported data. Li et al. (2024) similarly identified the need for broader research scopes, longitudinal investigation, attention to learners' experiences, and closer examination of feedback quality. This gap is particularly important in Pakistan. Although research on generative AI in Pakistani higher education is beginning to emerge, much of the available work has focused on perceived usefulness, personalized learning, engagement, or the potential benefits of AI. The recent Pakistani study by Nawaz et al. (2026), for example, reports positive experiences of personalized English learning through generative AI, particularly through individualized feedback and prompt-based interaction.

1.3. Rationale and Importance of the Study

The present study responds to this gap by examining the boundary between AI assistance and AI dependence from the learners' perspective. Guided by learner autonomy and Oxford's Strategic Self-Regulation (S2R) Model, the study views learners as active participants who plan, monitor, evaluate, and regulate their learning while interacting with AI. This theoretical position is important because it shifts attention away from AI as an independent technological agent and places the learner's decisions at the centre of the discussion. Other than that, recent research increasingly recognizes that AI can support autonomy while simultaneously creating conditions for overreliance. The challenge, therefore, is not to position AI as either an assistant or a substitute in absolute terms. Rather, learners may move between these positions depending on the task, their confidence, their trust in AI, their habits, and the amount of cognitive effort they are willing to invest.

Accordingly, this study examines how university-level ESL learners in Pakistan experience this shifting boundary in their everyday use of generative AI. Particular attention is given to habitual use, cognitive effort, trust in AI-generated responses, verification practices, and personal responsibility. By focusing on these experiences, the study seeks to contribute a more nuanced understanding of learner autonomy in AI-mediated English language learning.

2. Literature Review

2.1 Generative AI in English Language Learning

The emergence of ChatGPT and other generative artificial intelligence (GenAI) tools has introduced a significant shift in language learning. Unlike many earlier digital tools that provided learners with predetermined resources, GenAI systems can respond dynamically to learners' questions and produce explanations, examples, feedback, translations, and language practice based on individual prompts. Meniado (2023), in an early review of ChatGPT in English language teaching and learning, highlighted its potential to provide meaningful language input, scaffold language production, offer feedback, and facilitate opportunities for language practice. At the same time, the review raised concerns about accuracy, academic integrity, and the possibility that students may use the technology without sufficiently engaging with the learning process.

Montenegro-Rueda et al. (2023), for example, found that ChatGPT had considerable potential for supporting teaching and learning but emphasized the need to consider ethical concerns, limitations in generated information, and the changing responsibilities of teachers and learners. Early language-learning studies also began to examine learners' perceptions, acceptance, and intentions to use ChatGPT. As summarized by Li et al. (2024), studies published during the first year of ChatGPT research explored issues including learner perceptions, usefulness, satisfaction,

feedback, writing support, and self-directed language learning.

Li et al. (2024) reviewed 36 publications on ChatGPT and language education and found that research was concentrated largely in higher education, with major attention given to writing, feedback, learner acceptance, and ethical concerns. However, they also identified concerns related to inaccurate information, privacy, and academic dishonesty. Their review further showed that writing had received considerably more attention than reading, speaking, and listening.

The growing evidence therefore suggests that GenAI can extend the learning environment beyond the classroom. Rather than being restricted by classroom time or teacher availability, learners can interact with AI according to their own pace and immediate needs. This possibility is particularly relevant to language learners because repeated practice and immediate feedback are important components of language development. Balci (2024), reviewed 21 studies, similarly found that ChatGPT could support language proficiency, motivation, engagement, individualized learning, and learner autonomy across different areas of EFL learning. Nevertheless, the review also noted that learners and teachers remained cautious because of technological limitations and ethical concerns.

Tram et al. (2024), using a multi-methods design involving a systematic review, a survey of 344 EFL learners, and 19 interviews, found that learners used ChatGPT for different English-learning purposes, including reading, writing, vocabulary, and grammar. Their findings also showed that interactivity, enjoyment, trust, and subjective norms influenced continued use through perceived usefulness.

2.2 Generative AI and Learner Autonomy

The growing use of GenAI has renewed interest in learner autonomy because the technology gives learners unprecedented control over when, where, and how they seek learning support. In principle,

learners can identify their own needs, formulate questions, and continue learning without waiting for teacher intervention. Such possibilities align closely with the central principles of learner autonomy, particularly responsibility, decision-making, and self-directed learning. However, autonomy should not be equated simply with technological independence. Autonomous learning involves making informed decisions about learning and taking responsibility for those decisions. Consequently, the quality of the learner's interaction with AI is more important than the mere frequency of AI use.

A qualitative study by Kohnke et al. (2023) examined how learners incorporated ChatGPT into language learning and highlighted the possibility of using AI as a conversation partner, writing assistant, and source of personalized support. The study is particularly relevant because it suggests that autonomy in AI-supported learning may not be an entirely individual process; instead, learners may distribute aspects of decision-making and learning activity between themselves and technological tools.

Balcı (2024) similarly identified enhanced learner autonomy as one of the reported benefits of ChatGPT in EFL education. However, the same review emphasized that the benefits of ChatGPT exist alongside limitations and ethical concerns. This duality is important. If learners use AI to identify errors, compare alternatives, ask follow-up questions, and evaluate explanations, the technology may strengthen their control over learning. If they simply accept generated responses and allow the system to complete tasks on their behalf, the same technology may weaken opportunities for independent thinking.

Mohebbi (2024) provides further support for this more balanced understanding. The study examined the role of AI in promoting learner independence and self-regulation in language education. Thus, the relationship between AI and autonomy is better understood as conditional rather than automatic: AI may facilitate autonomy

when learners retain control over learning decisions, but its availability alone does not guarantee autonomous learning.

2.3 AI, Self-Regulation, and the Learner's Active Role

The connection between AI and learner autonomy becomes clearer when examined through self-regulated learning. Self-regulation requires learners to actively plan their learning, monitor their progress, evaluate outcomes, and modify their strategies when necessary. In AI-mediated learning environments, these processes may be supported by the technology, but they may also be transferred to the technology.

Recent research provides evidence for both possibilities. Guan et al. (2024 & 2025), in a systematic review of 27 studies on educational chatbots and self-regulated learning, found that chatbots commonly supported learners in identifying resources, selecting strategies, and monitoring their learning. However, comparatively limited guidance was provided for goal setting, planning, reflection, and adapting future learning. The authors therefore concluded that although chatbots can promote productive self-regulated learning processes, their effects are not consistently positive and may vary across contexts.

Chang and Sun (2024) similarly examined the relationship between AI and self-regulated language learning through a systematic review. Their findings suggest that AI can function as a cognitive or “mind” tool that supports learners' strategic engagement and critical thinking. However, they also emphasize that meaningful benefits depend on learners' active participation in the different phases of self-regulation rather than simply interacting with AI. This distinction is directly relevant to the present study because it draws attention to what learners actually do while using AI rather than simply asking whether AI is available or useful.

Özturan (2025), in a systematic review specifically examining self-regulated language learning and GenAI, found that the emerging empirical literature was concentrated mainly on university-level EFL learners and that ChatGPT was the most frequently examined GenAI tool. Similarly, Lan and Zhou (2025), reviewing AI-supported self-regulated learning in higher education, found evidence that AI applications including chatbots, adaptive feedback systems, and other AI-supported tools can support autonomy and self-regulatory processes.

2.4 From AI Assistance to Technological Dependence

The positive potential of GenAI should therefore be considered alongside the possibility of overreliance. The concern is not simply that learners use AI frequently but that repeated and effortless access to generated responses may gradually change how learners approach learning tasks. When AI performs cognitive activities that learners would otherwise undertake themselves, the technology may shift from being a scaffold for learning to becoming a substitute for learning effort. This concern was already visible in the early literature. Meniado (2023) identified academic and pedagogical concerns surrounding ChatGPT use in English learning, particularly regarding how learners might use generated content and feedback.

2.5 Trust, Verification, and Cognitive Effort

Trust is an important factor in understanding the relationship between AI assistance and dependence. When learners perceive AI responses as reliable, useful, and easy to obtain, they may be more willing to incorporate the technology into regular learning practices. Tram et al. (2024) found that trust was among the factors influencing learners' continued use of ChatGPT for self-directed English learning. Trust, however, can have both productive and problematic consequences. Appropriate trust may encourage

learners to experiment with AI and use it as a learning resource, whereas uncritical trust may reduce the likelihood that learners will verify AI-generated information.

Verification is therefore central to responsible AI-supported learning. Lo et al. (2024) specifically identified incorrect information as one of the important challenges in ESL/EFL applications of ChatGPT. The ability to verify AI responses consequently becomes an important indicator of learner agency. A learner who checks an explanation against a textbook, dictionary, teacher, or reliable source is demonstrating a different level of strategic engagement from a learner who accepts the first generated response without question. The convenience of GenAI may reduce the amount of effort required to complete a task, but reduced effort is not necessarily equivalent to improved learning.

2.6 The Pakistani Higher-Education Context

Although research on generative AI in language education has expanded rapidly internationally, evidence from Pakistan remains comparatively emerging. This makes the Pakistani higher-education context important for examining how learners negotiate AI in settings where English carries considerable academic and professional significance. Students may use generative AI not only for formal assignments but also for vocabulary development, grammar clarification, translation, writing assistance, and independent learning outside the classroom.

However, the important issue for the present study is not simply whether Pakistani learners are using AI. Rather, it is how they understand their own responsibility while using it. International research increasingly demonstrates that AI can support personalized and self-directed learning, but the extent to which these benefits translate into learner autonomy depends on learners' strategic engagement with the technology. This question is particularly relevant in contexts where students may have varying levels of access to

teacher support, English-language resources, and opportunities for independent practice.

The existing international literature therefore provides a useful foundation, but it cannot simply be transferred to the Pakistani context. Educational cultures, assessment practices, students' previous experiences with technology, perceptions of authority, and access to English-language resources may influence how learners position AI within their learning practices. More importantly, existing research has tended to examine AI acceptance, perceived usefulness, learning outcomes, and general attitudes more often than learners' lived experiences of negotiating dependence and autonomy.

2.7 Synthesis and Research Gap

The literature reviewed above reveals a clear progression in research on GenAI and language learning. Early work in 2023 established the potential of ChatGPT to provide language input, feedback, practice, and learning support while simultaneously raising concerns about accuracy, ethics, and academic integrity (Meniado, 2023; Montenegro-Rueda et al., 2023). Research in 2024 expanded considerably and demonstrated the usefulness of ChatGPT for personalized and self-directed learning while also identifying important limitations and gaps, particularly regarding language skills beyond writing, longitudinal evidence, and the quality of AI-generated feedback (Li et al., 2024; Lo et al., 2024; Tram et al., 2024). Research in 2025 has increasingly moved toward learner autonomy and self-regulation. Systematic reviews and meta-analyses suggest that AI can support planning, monitoring, strategy use, and self-directed learning, but they also show that the evidence base remains relatively limited and that the effects of AI depend on how learners engage with the technology (Lan & Zhou, 2025; Özturan, 2025). Despite this progress, an important gap remains. Existing research tells us considerably more about what AI can do for learners than about what learners do with AI when they have to decide

how much of the learning process to retain for themselves. In particular, insufficient attention has been given to the lived experience of negotiating between AI as a source of scaffolding and AI as a substitute for independent effort. Questions concerning habitual use, trust, verification, cognitive effort, decision-making, and personal responsibility remain particularly important.

The present study addresses this gap by examining how university-level ESL learners negotiate this boundary in their everyday use of generative AI for English language learning. Rather than assuming that AI automatically increases or decreases learner autonomy, the study investigates how learners themselves experience this tension and how they regulate their engagement with AI. This focus provides a basis for examining learner autonomy not as a fixed outcome of technology use but as an ongoing process of decision-making, monitoring, evaluation, and responsibility within an AI-mediated learning environment.

3. Methodology

3.1 Research Design

This study employs a qualitative multiple-case study design to explore how university-level English as a Second Language (ESL) learners in Pakistan negotiate the boundary between using generative artificial intelligence (GenAI) as a learning assistant and becoming dependent on it. A qualitative approach is appropriate because the study is concerned with learners' experiences, perceptions, decision-making, and everyday practices rather than with measuring the effectiveness of AI through numerical outcomes. The study seeks to understand how learners themselves interpret their use of AI and how they make decisions about when to accept, evaluate, verify, or rely on AI-generated responses. In this design, each learner was treated as a case through which their experiences of AI-supported language learning can be explored in depth.

will be grouped into potential themes concerning the ways learners negotiate AI assistance and dependence. The themes were then reviewed and refined to ensure that they adequately represent the participants' accounts and address the central research problem. The analysis moved beyond simply reporting how often particular practices are mentioned. Instead, it was interpreted how learners understand and negotiate the relationship between technological assistance and their own responsibility for learning.

Importantly, the analysis did not treat AI use as inherently autonomous or dependent. The same practice may have different meanings depending

on the learner's purpose and level of engagement. For example, using AI to obtain an explanation and subsequently evaluate that explanation may represent strategic and self-regulated learning, whereas asking AI to complete a task and accepting the response without evaluation may indicate a transfer of cognitive responsibility to the technology. This analytical distinction is central to the study's conceptualization of the assistant-substitute boundary. The final themes therefore are to be interpreted in relation to learner autonomy and Oxford's S2R Model, particularly the processes of planning, monitoring, evaluation, and regulation.

Table 1. Initial Codes and Theoretical Alignment

Theoretical concept	Initial codes	What the codes capture in the data	Analytical interpretation
Learner autonomy	Independent decision-making	Learner decides when, why, and how to use AI	Degree of learner agency
Learner autonomy	Ownership of learning	Learner takes responsibility for completing and understanding a task	Retention or transfer of learning responsibility
Learner autonomy	Self-directed learning	Learner initiates AI-supported learning without direct teacher intervention	Learner control over learning
Learner autonomy	Choice of learning strategies	Learner selects AI for explanation, practice, translation, feedback, etc.	Strategic exercise of autonomy
S2R: Planning	Goal setting	Learner identifies what needs to be learned before using AI	Evidence of purposeful learning
S2R: Planning	Task planning	Learner decides how AI will be incorporated into a learning task	Strategic preparation
S2R: Monitoring	Monitoring understanding	Learner checks whether an AI explanation or response is understandable	Awareness of learning progress
S2R: Monitoring	Monitoring AI output	Learner notices errors, inconsistencies, or limitations in AI responses	Metacognitive monitoring
S2R: Evaluation	Verification	Learner checks AI responses against teachers, textbooks, dictionaries, or other sources	Critical evaluation of AI

Theoretical concept	Initial codes	What the codes capture in the data	Analytical interpretation
S2R: Evaluation	Judging accuracy	Learner assesses whether AI-generated information is correct and appropriate	Evaluative judgement
S2R: Evaluation	Comparing alternatives	Learner compares AI suggestions with their own answer or other resources	Critical engagement
S2R: Regulation	Strategy adjustment	Learner changes prompts, strategies, or resources when AI does not provide an adequate response	Adaptive self-regulation
S2R: Regulation	Prompt modification	Learner changes or refines prompts to obtain more useful language support	Strategic regulation of AI interaction
AI assistance/scaffolding	Explanation seeking	AI is used to clarify grammar, vocabulary, concepts, or language problems	AI functions as a learning scaffold
AI assistance/scaffolding	Feedback seeking	Learner requests correction or feedback and uses it to improve work	Supportive use of AI
AI assistance/scaffolding	Practice support	Learner uses AI for language practice or experimentation	AI extends learning opportunities
AI dependence	Answer substitution	Learner asks AI to produce answers rather than developing them independently	AI replaces learner effort
AI dependence	Task completion by AI	Learner allows AI to complete substantial portions of a learning task	Transfer of cognitive responsibility
AI dependence	Automatic acceptance	Learner accepts AI-generated responses without questioning or evaluating them	Reduced learner agency
AI dependence	Habitual use	Learner turns to AI automatically or before attempting a task independently	Possible movement toward technological dependence
Cognitive effort	Independent thinking	Learner attempts to solve or develop a response before consulting AI	Retention of cognitive responsibility
Cognitive effort	Reduced effort	Learner reports avoiding difficult thinking because AI provides an immediate answer	Possible cognitive offloading
Cognitive effort	Productive struggle	Learner continues thinking, revising, and problem-solving despite AI availability	Sustained learning engagement
Trust	Confidence in AI	Learner considers AI reliable or knowledgeable	Basis for continued AI use

Theoretical concept	Initial codes	What the codes capture in the data	Analytical interpretation
Trust	Uncritical trust	Learner assumes AI responses are correct without verification	Risk of dependence
Trust	Conditional trust	Learner trusts AI for some tasks but verifies important or uncertain information	Critical and selective use
Personal responsibility	Accountability	Learner recognizes responsibility for the final learning outcome or answer	Ownership of learning
Personal responsibility	Responsibility transfer	Learner shifts responsibility for thinking or completing tasks to AI	Reduced learner ownership

The initial coding process (Table 1) was informed by the study's theoretical framework while remaining open to codes emerging directly from participants' accounts. The concepts of learner autonomy and Oxford's Strategic Self-Regulation (S2R) Model provided sensitizing concepts for examining learners' decision-making, planning, monitoring, evaluation, and regulation. At the same time, codes relating specifically to AI assistance, technological dependence, trust, verification, cognitive effort, habitual use, and responsibility were developed in response to the substantive focus of the study. Thus, the analysis did not impose the theoretical framework mechanically on the data. Instead, theoretical concepts provided an interpretive lens through which participants' experiences could be examined, while inductive coding allowed unexpected meanings and experiences to emerge. During the initial coding stage, interview transcripts were examined line by line and meaningful segments of participants' accounts were assigned descriptive codes. The theoretical concepts were therefore used primarily to support interpretation rather than to predetermine the findings.

4. Discussion

The present study approaches generative artificial intelligence (GenAI) from a position that is deliberately different from the predominantly

affordance-oriented discussion of AI in language education. Rather than asking whether AI improves English learning, the study asks a more difficult question: what happens to learner agency when assistance becomes continuously available? This distinction is theoretically important because the presence of AI does not necessarily indicate either autonomy or dependence. The literature increasingly demonstrates that GenAI can facilitate self-directed learning, provide individualized feedback, and support self-regulatory processes, but it also raises concerns about over-reliance, reduced cognitive effort, and the transfer of learning responsibility from students to technology. The discussion therefore interprets AI-mediated learning through learner autonomy and Oxford's Strategic Self-Regulation (S2R) Model, treating autonomy as an ongoing process of decision-making, monitoring, evaluation, and regulation rather than as a stable learner characteristic.

4.1 Beyond the Binary of AI as Assistant or Substitute

A central implication of the study is that the distinction between AI as an “assistant” and AI as a “substitute” cannot be understood as a simple technological binary. The same AI system can perform both roles depending on what the learner asks it to do and, more importantly, what the learner continues to do after receiving the AI

response. This challenges interpretations of AI use based primarily on frequency, perceived usefulness, or learning outcomes. Previous research has established the positive affordances of GenAI. Li et al. (2024), for example, identified self-directed learning, content generation, feedback, and other forms of learner support among the major uses of ChatGPT in language education. Lo et al. (2024) similarly reported personalized learning and increased learning opportunities as important affordances, although their review also identified inaccurate information and academic dishonesty as significant concerns. These findings establish that AI can expand the resources available to language learners, but they do not fully answer the question of who retains responsibility for learning.

This distinction becomes particularly important from a learner-autonomy perspective. Autonomy has traditionally been associated with learners' capacity to make decisions concerning their learning rather than simply their ability to work without a teacher. The present study therefore complicates the assumption that greater technological independence automatically produces greater learner autonomy.

This interpretation is consistent with Mohebbi's (2025) systematic review, which concludes that AI can promote learner independence and self-regulation while simultaneously creating risks of over-reliance. However, the present study pushes this argument further by locating the problem not simply in "overuse" but in the distribution of cognitive responsibility. Dependence occurs when activities that constitute learning, such as generating ideas, evaluating alternatives, solving linguistic problems, or monitoring understanding, are progressively transferred to the technological system. In this sense, the important question is not *How much AI does the learner use?* but *What does the learner still do when AI is available?*

4.2 Learner Autonomy as Negotiated Agency

The findings consequently are to be interpreted through a more dynamic conception of learner autonomy. The literature reviewed in the study suggests that autonomous learners may use AI strategically, while AI-mediated practices may also influence the development of autonomy. Xu and Liu (2025), for instance, reported positive effects of both Duolingo and ChatGPT on autonomy, critical thinking, motivation, and enjoyment. Similarly, recent research has shown that AI-supported learning can create opportunities for learners to experiment, make choices, and take greater initiative.

However, these positive outcomes are not interpreted as evidence that AI is inherently autonomy-enhancing. Such an interpretation would overlook the learner's role in mediating technology. If learners use AI to identify a linguistic problem, compare alternatives, and subsequently make their own decision, AI may extend their agency. If they use exactly the same technology to produce the answer, select the response automatically, and avoid independent engagement, the technology may instead narrow their agency.

This distinction is compatible with the S2R Model because strategic self-regulation requires learners to exercise control over their learning processes. In an AI-mediated environment, however, regulation acquires an additional dimension: learners must regulate their relationship with the technological resource itself. They must decide when to consult AI, what to ask, how much assistance to request, whether the response is trustworthy, and whether further independent effort is necessary. Thus, AI does not simply become another learning strategy; it becomes an object of strategic regulation.

Recent evidence supports this interpretation. Guan et al. (2025) found that educational chatbots can support resource identification, strategy selection, and monitoring, but that support for goal setting, reflection, and adaptation remains comparatively limited. This suggests an important

theoretical tension: AI may be particularly effective at supporting the middle stages of self-regulation while potentially weakening the learner's need to initiate or complete those processes independently. Consequently, the present study conceptualizes autonomy not as the absence of technological support but as the continued ownership of learning decisions in the presence of technological support.

4.3 Strategic Self-Regulation: Support or Delegation?

The S2R perspective provides a particularly useful lens for understanding the ambiguity of AI-mediated learning. Self-regulation involves planning, monitoring, evaluating, and regulating learning behaviour. AI can potentially support each of these processes, but it can also perform activities that would otherwise require learners to regulate themselves. For example, asking AI to provide examples may support learning without replacing the learner's strategic role. Asking AI to determine which argument is best, produce the complete response, correct every linguistic problem, and explain the result may gradually reduce the learner's involvement in planning and evaluation. The distinction is subtle but theoretically significant. The technology appear to support self-regulation while simultaneously externalizing the regulatory work.

This observation complicates the generally positive conclusions of recent systematic reviews. A 2024 meta-analysis found that GenAI had significant positive effects on English proficiency and self-regulation in informal digital learning contexts. Similarly, Özturan's (2025) systematic review found generally positive effects of GenAI integration on self-regulated language learning, although the empirical evidence remains limited. These studies establish that AI can be associated with stronger self-regulated learning, but association with self-regulation does not necessarily establish that learners are

independently performing all regulatory functions.

This is where the qualitative orientation of the present study becomes particularly valuable. Rather than treating self-regulation as an outcome score, the study examines how learners experience and negotiate decisions about assistance, effort, verification, and responsibility. Such an approach can reveal processes that quantitative measures of autonomy may conceal. A learner may report high confidence and high AI use simultaneously, for example, while the underlying interaction may involve either strategic engagement or substantial cognitive delegation. Thus, the theoretical contribution of the study lies in proposing that AI-mediated S2R should include regulation of AI involvement itself. Learners do not only regulate their learning; they increasingly regulate the degree to which an external technological system participates in that learning.

4.4 Cognitive Effort: When Does Efficiency Become Dependence?

The issue of cognitive effort provides one of the strongest grounds for critically questioning the assumption that more efficient learning is necessarily better learning. GenAI can reduce the time required to generate language, search for explanations, translate information, or correct errors. Such efficiency can be beneficial when it removes unnecessary barriers. However, language learning also requires productive struggle, retrieval, formulation, comparison, revision, and reflection. The manuscript already distinguishes between AI reducing *unproductive effort* and AI removing *productive cognitive engagement*. This distinction is crucial because a reduction in effort can represent either pedagogical improvement or learning loss.

Deng et al. (2025) provided evidence for precisely this tension. Their meta-analysis reported positive effects of ChatGPT on academic performance, affective-motivational outcomes, and higher-order thinking, but also identified reduced mental effort

and called for attention to long-term consequences. The apparent contradiction is theoretically productive: if AI improves performance while reducing mental effort, the final product alone cannot demonstrate that learning has improved.

From the perspective of learner autonomy, this means that successful task completion should not be equated with autonomous learning. A learner may produce a sophisticated English paragraph but exercise little agency in generating its ideas, organizing its argument, or selecting its linguistic forms. Therefore, assessment of AI-mediated language learning should move beyond the quality of the final product and consider the process through which the product was constructed.

This argument also aligns with recent research showing that learners themselves recognize this tension. Dizon, Gold, and Barnes (2025) found that students perceived ChatGPT as useful for L2 learning while simultaneously expressing concerns that excessive reliance could hinder language development. The significance of this finding is that dependence is not necessarily an externally imposed judgement by teachers or researchers; learners may themselves recognize that convenience can conflict with learning.

4.5 Trust Does Not Equal Critical Engagement

Trust constitutes another important mechanism through which assistance can develop into dependence. The existing literature indicates that trust contributes to continued ChatGPT use. Tram et al. (2024), for example, found that trust, interactivity, enjoyment, and subjective norms influenced continued use through perceived usefulness. Yet the present study suggests that trust needs to be differentiated from critical trust. A learner can reasonably trust AI as a useful starting point while still recognizing that its outputs require evaluation. By contrast, uncritical trust effectively removes the need for verification. This distinction is especially important because generative AI produces responses that are often

fluent and authoritative in appearance. Linguistic fluency can therefore become confused with epistemic reliability.

The issue connects directly with learner autonomy. Verification is not simply a technical digital-literacy skill; it is an act of learner agency. When learners compare an AI explanation with another source, question an answer, revise a prompt, or reject an inappropriate suggestion, they retain epistemic responsibility. When they accept an answer because “AI said so,” that responsibility is displaced. Recent research similarly emphasizes critical engagement rather than mere access. Hamamra et al. (2026), examining AI literacy and mediated learner autonomy in university EFL writing, emphasize that autonomy in AI-supported learning depends on learners' critical engagement with AI rather than simple acceptance of its outputs. This supports the argument that AI literacy and learner autonomy are increasingly intertwined: autonomous learners in AI-mediated environments need not only to make learning decisions but also to evaluate the epistemic status of the technology they are using.

4.6 Habitual Use and the Gradual Normalization of Dependence

Habitual use presents a further challenge to autonomy because dependence may develop gradually rather than through an obvious decision to surrender control. The problem is therefore not simply frequent AI use. Frequent use can be strategically productive. The concern emerges when consulting AI becomes the learner's default response to difficulty. This distinction is largely absent from technology-acceptance approaches that focus on perceived usefulness, ease of use, behavioural intention, or continued use. Tram et al. (2024), for example, demonstrate why learners continue using ChatGPT for English learning, while other studies similarly document positive perceptions and acceptance. Such research is valuable for understanding adoption, but

adoption does not tell us whether the learner is becoming more or less autonomous.

The present study therefore shifts the analytical focus from technology acceptance to responsibility allocation. A learner may accept AI because it is useful, but the educational question is what repeated acceptance does to the learner's own strategies. If every unfamiliar word is translated, every sentence corrected, every idea generated, and every difficult task solved by AI, the learner may gradually lose opportunities to exercise the very strategies that autonomy requires. This provides an important critical extension to existing research. Rather than conceptualizing dependence as an extreme or pathological form of AI use, it may be more useful to understand it as a continuum of delegated cognitive responsibility. Dependence can therefore develop incrementally through otherwise ordinary and individually rational decisions to save time, reduce uncertainty, or avoid difficulty.

4.7 The Pakistani Context: Access Can Produce Both Agency and Dependence

The Pakistani context makes this tension particularly important. The manuscript identifies English as an important language for academic and professional opportunities while also recognizing unequal access to individualized language support and opportunities for English interaction. AI can therefore perform an important democratizing function by providing learners with immediate access to explanations, feedback, translation, and practice. This should not be overlooked in a critical discussion. A discourse that focuses exclusively on AI dependence risks reproducing a deficit view of learners who rely on AI because other forms of linguistic support are unavailable or difficult to access. For some learners, AI may represent not a replacement for learning but an expansion of their previously limited learning environment. At the same time, increased access creates a new pedagogical problem. If AI becomes the most

accessible source of English knowledge, learners may increasingly position the system as an authority. The question is therefore not simply whether AI reduces dependence on teachers. It may simultaneously create a new form of dependence on technological mediation.

This point is particularly significant in Pakistan because the literature on GenAI in the local higher-education context is still emerging. The manuscript notes that recent Pakistani research has emphasized personalized learning, engagement, and perceived usefulness, while comparatively less attention has been given to learners' negotiation between autonomy and dependence. The present study consequently contributes by moving the discussion from access to agency: having access to AI is not the same as having control over how AI participates in learning.

4.8 Reconsidering the Meaning of “Autonomous Learner” in the GenAI Era

Taken together, these arguments require a reconsideration of what it means to be an autonomous language learner. In pre-GenAI environments, autonomy was often discussed in terms of learners' capacity to work independently, identify resources, choose strategies, and monitor progress. In AI-mediated environments, these capacities remain important but are no longer sufficient. This represents a theoretical extension of learner autonomy rather than a rejection of its established principles. Autonomy becomes increasingly distributed but not necessarily surrendered.

Recent research supports this movement toward a more complex conception of autonomy. Xu and Liu (2025) found positive effects of AI-supported learning on autonomy and critical thinking, while newer work on AI-supported self-regulated language learning emphasizes strategic engagement and critical monitoring of AI outputs. These findings suggest that the future of autonomy research should not focus on whether learners use

technology independently of teachers, but on whether learners remain epistemically and strategically active while using technology. The central argument emerging from this study is therefore that GenAI does not simply increase or decrease learner autonomy. Instead, it reconfigures the conditions under which autonomy is exercised. AI can make learning more accessible, personalized, flexible, and responsive, but these same characteristics can make it easier for learners to delegate cognitive work that is essential for language development.

AI assistance becomes autonomy-supportive when learners use it to extend their own strategic activity. It becomes autonomy-constraining when it replaces the strategic activity itself. S2R helps explain this distinction because planning, monitoring, evaluation, and regulation remain the learner's responsibility even when AI participates in the process. Consequently, the most important contribution of the study is not the claim that learners should use less AI. Evidence shows that AI can positively support self-directed and self-regulated language learning. Rather, the study suggests that learners need to develop the capacity to regulate their reliance on AI.

This reframing is particularly important for higher education. If AI is incorporated only as a productivity tool, it may optimize task completion without necessarily optimizing learning. If it is incorporated as a strategically regulated scaffold, however, it can extend learners' access to feedback, explanation, practice, and reflection while preserving their responsibility for learning. The boundary between AI as assistant and AI as substitute is therefore not determined by the technology itself. It is produced through the learner's ongoing decisions about effort, trust, verification, strategy, and responsibility.

References

- Deng, R., Jiang, M., Yu, X., Lu, Y., & Liu, S. (2025). Does ChatGPT enhance student learning? A systematic review and meta-analysis of experimental studies. *Computers & Education*, 221, 105224. <https://doi.org/10.1016/j.compedu.2024.105224>
- Hamamra, B., Khlaif, Z. N., & Mahamid, N. (2026). AI literacy and mediated learner autonomy in ChatGPT-supported EFL writing: A qualitative study at a Palestinian university. *International Journal of Educational Technology in Higher Education*, 23, 19. <https://doi.org/10.1186/s41239-026-00597-7>
- Li, B., Lowell, V. L., Wang, C., & Li, X. (2024). A systematic review of the first year of publications on ChatGPT and language education: Examining research on ChatGPT's use in language learning and teaching. *Computers and Education: Artificial Intelligence*, 7, 100266. <https://doi.org/10.1016/j.caeai.2024.100266>
- Lo, C. K., Yu, P. L. H., Xu, S., Ng, D. T. K., & Jong, M. S. Y. (2024). Exploring the application of ChatGPT in ESL/EFL education and related research issues: A systematic review of empirical studies. *Smart Learning Environments*, 11, 50. <https://doi.org/10.1186/s40561-024-00342-5>
- Mohebbi, A. (2025). Enabling learner independence and self-regulation in language education using AI tools: A systematic review. *Cogent Education*, 12(1), 2433814. <https://doi.org/10.1080/2331186X.2024.2433814>

- Nawaz, A. R., Umar, H., & Khan, E. U. (2026). Generative AI and personalized English language learning: A case study of NUML English Language Advanced Diploma learners. *University of Chitral Journal of Linguistics and Literature*, 10(1), 94–101.
- Tram, N. H. M., Nguyen, T. T., & Tran, C. D. (2024). ChatGPT as a tool for self-learning English among EFL learners: A multi-methods study. *System*, 127, 103528. <https://doi.org/10.1016/j.system.2024.103528>
- Xu, J., & Liu, Q. (2025). Uncurtaining windows of motivation, enjoyment, critical thinking, and autonomy in AI-integrated education: Duolingo vs. ChatGPT. *Learning and Motivation*, 89, 102100. <https://doi.org/10.1016/j.lmot.2025.102100>
- Balcı, Ö. (2024). The role of ChatGPT in English as a foreign language (EFL) learning and teaching: A systematic review. *International Journal of Current Educational Studies*, 3(1), 66–82. <https://doi.org/10.46328/ijces.107>
- Guan, R., Raković, M., Chen, G., & Gašević, D. (2025). How educational chatbots support self-regulated learning? A systematic review of the literature. *Education and Information Technologies*, 30, 4493–4518. <https://doi.org/10.1007/s10639-024-12881-y>
- Lan, M., & Zhou, X. (2025). A qualitative systematic review on AI empowered self-regulated learning in higher education. *npj Science of Learning*, 10, 21. <https://doi.org/10.1038/s41539-025-00319-0>
- Li, B., Lowell, V. L., Wang, C., & Li, X. (2024). A systematic review of the first year of publications on ChatGPT and language education: Examining research on ChatGPT's use in language learning and teaching. *Computers and Education: Artificial Intelligence*, 7, 100266. <https://doi.org/10.1016/j.caeai.2024.100266>
- Lo, C. K., Yu, P. L. H., Xu, S., Ng, D. T. K., & Jong, M. S. Y. (2024). Exploring the application of ChatGPT in ESL/EFL education and related research issues: A systematic review of empirical studies. *Smart Learning Environments*, 11, 50. <https://doi.org/10.1186/s40561-024-00342-5>
- Meniado, J. C. (2023). The impact of ChatGPT on English language teaching, learning, and assessment: A rapid review of literature. *Arab World English Journal*, 14(4), 3–18. <https://doi.org/10.24093/awej/vol14no4.1>
- Mohebbi, A. (2024). Enabling learner independence and self-regulation in language education using AI tools: A systematic review. *Cogent Education*, 12(1), 2433814. <https://doi.org/10.1080/2331186X.2024.2433814>
- Montenegro-Rueda, M., Fernández-Cerero, J., Fernández-Batanero, J. M., & López-Meneses, E. (2023). Impact of the implementation of ChatGPT in education: A systematic review. *Computers*, 12(8), 153. <https://doi.org/10.3390/computers12080153>
- Özturan, T. (2025). Self-regulated language learning and generative AI: A systematic review. *Boğaziçi University Journal of Education*, 42(3), 177–194. <https://doi.org/10.52597/buje.1751534>

Tram, N. H. M., Nguyen, T. T., & Tran, C. D.
(2024). ChatGPT as a tool for self-learning
English among EFL learners: A multi-
methods study. *System*, 127, 103528.
<https://doi.org/10.1016/j.system.2024.103528>

