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Article

Exploring the Role of AI Technology Adoption in at-Risk Students' Absenteeism and Boredom

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Abstract
The influence of Artificial Intelligence (AI) technologies in different areas of English as a foreign language (EFL) education has been widely explored in recent years. However, the emotional consequences of adopting such tools in at-risk education have remained underexplored, to date. To address the gap, our study drew on the control-value theory (CVT) to uncover the role of AI adoption in reducing 35 at-risk undergraduate EFL learners' absenteeism and boredom. The data were collected from online interviews and a narrative frame. Thematic analysis of the data revealed five ways in which AI integration could regulate both constructs of absenteeism and boredom. Particularly, it was found that by 'offering personalized learning', 'increasing classroom engagement', 'providing instant and tailored feedback', 'diversifying learning materials', and 'granting agency and autonomy', AI tools affected learners' absenteeism and boredom. These findings suggest that AI-based professional development could empower EFL teachers to more effectively support at-risk learners' emotional and behavioral needs. The study contributes to our understanding of emotional aspects of AI adoption in educational domains.

Keywords
Artificial Intelligence (AI), absenteeism, boredom, EFL students, at-risk students

1 Introduction

The integration of Artificial Intelligence (AI) into language education has attracted considerable scholarly attention, with research highlighting its capacity to transform teaching, testing, and learning

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practices (Derakhshan et al., 2026; Edmett, 2025; Kohnke et al., 2023; Teng, 2024; Yang & Derakhshan, 2026; Zare et al., 2025). Based on the theory of disruptive innovation, generative AI has the potential to fundamentally transform language education beyond simply facilitating existing practices (Todd, 2025). Research evidence has exponentially considered AI as a catalyst for innovation in language instruction, offering learners personalized pathways, enriched input, and immediate feedback that foster engagement and language skills (Derakhshan & Li, 2026; Du & Yang, 2025; Guo et al., 2023; Kartal & Yeşilyurt, 2024; Muñoz et al., 2025; Pan & Wang, 2025; Weng & Chiu, 2023; Xu et al., 2025; Zhou & Hou, 2024). Moreover, AI-mediated language instruction provides access to learning content, which aligns well with learners' proficiency level in English and their learning interests (Dai & Liu, 2024). AI-driven tools, particularly chatbots and multimodal platforms such as ChatGPT, can support autonomy (Teng, 2025), enhance motivation (Huang & Mizunoto, 2024), and influence learners' emotional experiences (Kartal & Yeşilyurt, 2024; Teng, 2026; Yang & Yang, 2025). Collectively, the burgeoning literature underscores the transformative role of AI in reshaping instructional practices and reconfiguring the psycho-affective dimensions of language education (Derakhshan & Ghiasvand, 2024).

Prior studies have embraced the role of AI inclusion in learners' positive and negative emotions (Derakhshan & Park, 2026a, b; Ghiasvand et al., 2026; Xin & Derakhshan, 2025); however, boredom has received scant attention in the context of AI-mediated instruction. Boredom, as a pervasive negative emotion in language education, is interrelated to diminished motivation, impaired cognition, and disengagement (Derakhshan et al., 2021; Pawlak et al., 2020). In accordance with CVT (Pekrun, 2006), boredom occurs when learners attach little value to the task or when their control over learning has been constrained. Additionally, boredom is aroused when students are embedded in teacher-fronted classrooms in which they are deprived of freedom of choice (Zawodniak et al., 2021). More notably, prior studies have accentuated the role of educational technologies on EFL learners' boredom (Chen et al., 2022; Pawlak et al., 2025). In this sense, with the growth of AI technologies, recent scholarship has indirectly examined how AI integration can impact students' boredom through interventional designs (Jalambo et al., 2025; Saleh & Alsubhi, 2025).

Another emotional variable that may be affected by AI tools is student absenteeism, which has received scant attention. By definition, student absenteeism refers to students' tendency to be absent from class (Birioukov, 2016). It negatively impacts learners' academic achievement, as reduced instructional time is interconnected with weaker performance and higher dropout risks (Gershenson et al., 2017; Klein et al., 2022). It is asserted that engagement and enjoyment can mitigate absenteeism in EFL contexts (Dincer et al., 2019; Guo, 2021). Moreover, diverse internal and external factors are reported to affect students' absenteeism in English language classes.

However, the scrutiny of literature indicates that despite the advancements of AI-mediated instruction, its role in EFL learners' boredom and absenteeism remains insufficiently examined. Moreover, existing studies have largely relied on quantitative approaches, and there is a dearth of qualitative studies that delve deeply into students' experiences of boredom and absenteeism in AI-driven instruction. Additionally, these gaps are particularly noticeable among at-risk EFL students, whose vulnerability to absenteeism and boredom may place them at greater risk of academic failure. In response to these lacunas, our study aims to investigate how AI technologies affect absenteeism and boredom among at-risk EFL students. It theoretically draws on CVT of emotions, which underscores the role of one's appraisals of value and control over an activity in experiencing specific positive and negative emotions (Pekrun, 2006). Possibly, in AI-mediated classes, where students assign less value to and feel less control during activities, the rate of boredom and absenteeism may rise. By focusing on this line, the findings of this study yield valuable insights into the emotional dimensions of AI-enhanced L2 instruction, while informing educators of the potential benefits and limitations of AI in mitigating learners' negative experiences within AI-mediated environments.

2 Literature Review

2.1 AI technologies and L2 education

Recent scholarship on the integration of AI into language education has flourished and has illustrated a wide array of affordances that enhance both teaching and learning practices (e.g., Derakhshan & Lalli, 2025; Stockwell, 2024; Wang et al., 2025). A growing body of evidence underscores the pivotal role of AI in advancing language education (Zhou & Hou, 2024). It is contended that AI-mediated L2 instruction responds effectively to learners' diverse needs and preferences by facilitating access to personalized learning opportunities (Derakhshan & Solhi, 2025). Moreover, AI-supported language learning environments provide learners with rich linguistic input, immediate feedback, and varied communicative tasks (Fryer et al., 2020; Guo et al., 2023). More importantly, AI-driven chatbots play a particularly significant role in language education by providing learners with authentic linguistic input through the construction of communicative dialogues (Kartal & Yeşilyurt, 2024). In this sense, multimodal AI tools such as ChatGPT are reported to support the development of both language skills and subskills (Zhang & Derakhshan, 2025; Zare et al., 2025). It should be noted that the integration of AI into education contexts enhances learner autonomy by offering unlimited access to educational content across time and place (Huang et al., 2023). Likewise, AI-mediated education has the potential to boost learner engagement through the provision of diverse task types (Dai & Liu, 2024). Beyond cognitive and behavioral dimensions, the incorporation of AI also affects the emotional experiences of both teachers and learners (Wang & Xue, 2024; Zong & Yang, 2025).

Moreover, recent studies have recognized that AI technologies might be instrumental for at-risk students, who are prone to falling behind or dropping out (Embarak & Hawarna, 2024). It is maintained that AI technologies can help identify at-risk students by analyzing their demographic, academic, and behavioral information (Embarak, 2020). Since AI-powered systems can analyze learning patterns and behaviors, student performance, attendance, and engagement, they can help students who might need additional support through early intervention (Hamid, 2024). By identifying at-risk students, AI technologies can provide personalized support and a learning path to these students (Baneres et al., 2019). As Elbouknify et al. (2025) remarked, AI-driven modelling can help identify students at risk of dropping out and mitigate the challenge of student dropout by offering timely and early interventions.

With AI technologies becoming increasingly embedded in educational contexts**,** a substantial body of research has examined various emotions in such contexts. For instance, Zhou and Hou (2024) reported the positive contribution of AI to behavioral, cognitive, and emotional dimensions of engagement by conducting and analyzing semi-structured interviews with 24 EFL teachers and 38 college students. In a very recent study, Derakhshan and Park (2026b) examined the role of multimodal AI tools in EFL students' positive and negative achievement emotions through the perspective of existential positive psychology. To this end, 82 EFL students were classified into a control group who received conventional education and an experimental group who were taught through multimodal AI-mediated instruction. The results indicated that multimodal AI tools could significantly affect EFL students' achievement emotions in that they could enhance their positive emotions and mitigate their negative emotions, including boredom. Zare et al. (2025) examined the use of ChatGPT in 60 EFL students' argumentative essay writing over a two-month period. Employing a mixed-methods approach, participants were divided into a control group and an experimental group. Results uncovered that the students in the experimental group enjoyed higher levels of engagement during essay writing. The qualitative data also revealed several themes, namely heightened motivation, reduced anxiety, greater interest, partnership, individualized feedback, and enhanced perceptions of competence. In under-resourced contexts, Yar and Sabzehparvar (2025) ran an experimental study and found that using AI tools could significantly change students' positive and negative achievement emotions. The well-being of under-resourced EFL teachers has also been affected by AI adoption (Wu & Yang, 2025). In another recent study, Teng (2026) compares the

effects of peer feedback versus GenAI feedback on emotional engagement in an EFL writing context. Participants were 152 first-year undergraduates at a Chinese university enrolled in an English writing course, divided into a peer feedback group (n=78) and a GenAI group (n=74) that used ChatGPT with tailored prompts. The findings suggest that while GenAI feedback offers clear benefits for emotional engagement in EFL writing instruction, it is most effective when complemented by human interaction. Additionally, Teng and Huang (2025) proposed a model that positions emotion as foundational, directly shaping engagement and well-being, with engagement serving as a mediator linking emotion to achievement and creating a positive feedback loop where success further enhances emotional health and motivation; AI supports this process through personalized feedback, gamification, and adaptive learning. While the emotional aspect of AI adoption has already started to be a critical area of inquiry, many types of emotions and behaviors in contexts that differ from normal education (e.g., at-risk learners) are still being overlooked in the literature.

2.2 Student absenteeism

Absenteeism is defined as a student being absent from educational settings (Birioukov, 2016). Prior studies have revealed that absenteeism negatively impacts students' academic achievement (Gershenson et al., 2017; Klein et al., 2022) since absent students receive less instruction, miss student-teacher or peer-to-peer interactions, and have limited access to activities that can lead to their academic development (Keppens, 2023). Students with reduced instructional hours achieve lower exam results, earn poorer grades, and are ultimately at greater risk of dropping out (Gershenson et al., 2017). This assertion can be supported through prior studies indicating that greater amounts of classroom instruction are positively associated with improved academic achievement (Marcotte & Hemelt, 2008). It should be noted that unexcused absenteeism has more dire consequences in relation to academic achievement than other justifiable reasons for absenteeism (Gershenson et al., 2017; Klein et al., 2022). Moreover, prior studies have indicated that absenteeism may stem from disengagement in the learning process since disengaged students are reluctant to fully utilize instruction time (Keppens & Spruyt, 2020). In this sense, engagement in classroom activities may prevent students from being absent.

The concept of absenteeism has recently drawn research attention in language education, and a few studies have probed this notion indirectly. For instance, Dincer et al. (2019) remarked that cognitive engagement would result in decreased absenteeism among EFL students. Guo (2021) examined the effects of foreign language enjoyment and learner engagement on EFL students' achievement and absenteeism and found that foreign language enjoyment had a negative correlation with absenteeism, with higher levels of enjoyment leading to lower levels of absenteeism. However, the study of EFL students' absenteeism is still in its infancy and requires more exploration. Moreover, absenteeism is underexplored in the context of technology-mediated instruction in both general and language education, and it remains unclear whether adopting innovative technologies like AI can prevent or minimize student absenteeism.

2.3 Student boredom

Boredom, being a multidimensional construct, can be characterized by its underlying causes, observable symptoms, degree of intensity, and level of stability (Derakhshan et al., 2021). Boredom is the convergence of disengagement, dissatisfaction, diminished motivation, and inattentiveness (Li et al., 2023; Pawlak et al., 2020). Boredom stems from inadequate energy, lack of interest, and insufficient hope in achieving goals (Kruk & Zawodniak, 2020). Boredom can be classified as either trait boredom or state boredom, with the former being a stable personality characteristic and the latter arising under specific circumstances (Daniels et al., 2015). As regards the causes of boredom in educational settings, boredom is aroused when the learning environment is disengaging (Macklem, 2015; Zhao & Wang, 2025),

and is believed to hamper effective learning and teaching and diminish students' interest in classroom participation (Derakhshan et al., 2021). Additionally, excessive teacher control (Hill & Perkins, 1985) and a lack of purpose for learning (Yeager & Walton, 2011) increase students' boredom. In this sense, CVT posits that when learners downplay the significance of tasks and lack autonomy in their learning, they tend to experience boredom (Pekrun, 2006).

In the context of L2 education, boredom is one of the most prevalent emotions experienced by L2 learners, which can influence different dimensions of learners' academic performance, engagement, and motivation (Li et al., 2023, 2024; Solhi et al., 2025). L2 students' boredom is associated with different cognitive, emotional, and behavioral variables, including impaired cognition, dissatisfaction, lack of motivation, and inadequate use of self-regulatory strategies (Li et al., 2024). In L2 settings, students might succumb to boredom as a result of their negative attitudes, teacher control, lack of coping strategies, insufficient language skills, lack of comprehension, and experiencing failure (Kruk & Zawodniak, 2020; Nakamura et al., 2021). Experiencing boredom, students tend to be less active, feel detached from their education, and be less engaged in the learning context (Zawodniak et al., 2021). Given the dire consequences of boredom in language learning outcomes, research on boredom in the L2 context has been thriving during recent years (e.g., Derakhshan & Fathi, 2025; Solhi & Derakhshan, 2026; Solhi et al., 2023, 2025; Tran & Bui, 2025; Li, 2025).

In congruence with the exponential growth of studies on boredom, previous research has suggested that the integration of technological affordances strongly influences L2 learners' boredom (Pawlak et al., 2020). In this sense, boredom in online education is reported to be affected by diverse learner-related, teacher-related, and technology-related factors (Pawlak et al., 2025). To illustrate this, Chen et al. (2022) examined the sources of boredom in online learning settings among 348 Chinese learners through a mixed-method research design. The results indicated three factors, namely classroom boredom, content boredom, and teacher/learner boredom in online settings. In another recent study, Bensalem et al. (2025) examined the role of grit, enjoyment, and boredom in L2 willingness to communicate (WTC) among 345 EFL students in a blended learning environment. The results indicated a strong relationship between grit, enjoyment, boredom, and WTC, with boredom having the strongest correlation with WTC.

Despite the pervasiveness of boredom in technology-mediated education, the interplay between AI technologies and boredom is underexplored. However, very recently, Jalambo et al. (2025) examined the effects of AI technologies on self-regulated vocabulary learning, knowledge of collocations, and foreign language learning boredom among 187 EFL students. The results illustrated that the experimental group had better performance than the control group in terms of vocabulary and collocation knowledge. Moreover, it was shown that the experimental group showed lower levels of boredom than the control group. Saleh and Alsubhi (2025) investigated how techno-competence in AI technologies could affect EFL learners' boredom, self-esteem, and writing skills. To do so, 66 students were divided into an experimental and a control group. The control group received conventional assessment techniques, while the experimental group was assessed using AI approaches. The findings showed that the experimental group outperformed the control group in writing skills. Moreover, as their boredom diminished, their self-esteem was enhanced.

This review demonstrates that the role of AI in EFL students' boredom has received scant attention. Furthermore, absenteeism is an underexplored notion in L2 education contexts, and there is a dearth of studies on how AI technologies can affect EFL learners' absenteeism. More notably, both boredom and absenteeism are far less researched among at-risk EFL students, with even less study being done in the context of AI inclusion for such students. Hence, to address these gaps, this study ventures to examine the role of AI technology adoption in at-risk EFL students' boredom and absenteeism. In particular, we intend to answer the following research question:

1. How do at-risk EFL students perceive the role of AI technology in mediating their experiences of boredom and their decisions regarding class attendance?

3 Method

3.1 Participants and context

Using convenience sampling, our study invited 35 at-risk EFL students, who were identified by their low-test scores, poor classroom performance, and high dropout rates (McLaughlin & Vacha, 1992). They also self-reported having family and economic problems. In other words, they had socio-economic vulnerability. The sample included 15 males and 20 females ranging from 18 to 30 years old. Their English proficiency levels varied from intermediate (n = 12) to upper-intermediate (n = 23), as measured by the Oxford Placement Test (OPT). The students were familiar with AI technologies such as ChatGPT and Gemini, reporting that they used them for learning English inside and outside the classroom context. Concerning education, the students were BA students of English language teaching and literature. They belonged to the middle class in terms of socio-economic status, as measured by some questions on their parents' education, occupation, and income.

3.2 Instruments

3.2.1 Semi-structured interview

As the first data source, a semi-structured interview was held online with each participant independently. After asking about demographic information, the participants were requested to explain their perceptions and opinions about the ways through which the adoption of AI tools may affect or reduce their absenteeism and boredom in L2 classes. The interview consisted of five questions that were asked and answered in English (Appendix). The interviews were conducted on the Google Meet platform. Each interview lasted 30 minutes. The interview sessions were audio-recorded by an online voice recorder application. The interviews were held on weekends or during the participant's free time rather than during instructional time.

3.2.2 Narrative frame

A written narrative frame was used to complement the interview data. It included three blank lines to fill out after the interview phase. The students' lived experiences and perceptions could be effectively measured by this instrument (Barkhuizen, 2014). The adopted AI tools and how they affected students' absenteeism and boredom were focused on in the frame. Instructions on how to complete the frame were provided by the researchers at the outset of the study.

3.3 Data collection procedure

The researchers planned out the goals and procedures of the study. Then, willing and available EFL students were cordially invited through social media. Colleagues also helped in finding participants. Demographic information questions were created to identify and invite participants with characteristics of being at risk. The socio-economic status of families was also assessed. Two sources of data were used in the study: an interview followed by a narrative frame. Both tools were shared with two experts to check their content validity. Afterwards, they were pilot tested with five at-risk EFL learners in the Golestan Province, Iran. The feasibility and clarity of interview items and narrative frames' segments were ensured via expert judgement. Then, the main phase began. The students were instructed through AI tools by their teacher. The classroom became engaging and persuasive for at-risk students to show up willingly. AI tools were not replacing the teacher but worked as assistants. Initially, 38 students agreed to partake in the study, but three later decided to leave, leaving 35 participants. The students were

guaranteed that their identity and personal information would remain absolutely secret and private. They provided consent at the start of the study. No conflict of interest was declared. The time and mode of the interviews and how the narrative frame could be completed were discussed with the participants. Their personal preferences to remain anonymous encouraged the use of virtual interviews. The students were therefore welcomed online, and the interviews were conducted individually, rather than in collective focus groups. The interviews included warm-ups, main questions, probing questions, and clarification requests. The process was friendly and relaxed. Technical concepts related to AI were explained to the students. Examples and real-life experiences were encouraged during the interviews. It took 40 days to gather the whole interview data as the students were busy with their studies.

Afterwards, the second phase of data collection began by asking all participants to complete a written narrative frame within a week. The frame was in the form of an editable Word file, which was sent to the respondents to fill in the blanks using a red color. Instructions were provided before the questions. Subsequently, the students were given a small gift (i.e., gift card) to appreciate their time, effort, and cooperation. The collected data were then carefully checked for accuracy and missing information to foster data analysis, as explained in the next section.

3.4 Data analysis

The data gathered from interviews and narratives were transcribed for qualitative analysis using thematic analysis. Braun and Clarke's (2006) framework was used to guide the analysis. Manual and inductive type of thematic analysis was adopted in this study. First, the transcripts of interviews and the written narratives were read and reviewed several times to get a general view of the data. Then, important segments were underlined to be used in coding. Next, eight initial codes were created after another round of analyzing and inspecting the underlined segments of responses. To condense and unify the codes, overlapping codes were then merged together, generating large themes in this stage. Of the initial codes, the study reached five broad themes. The process was iterative and reflexive. As a transparent example, for the first extracted theme of the study, two initial codes of "personalized learning" and "individual-oriented path" were combined.

The next stage concerned reviewing the created themes in terms of reliability and validity. Expert opinion and judgement were used to confirm content validity and inter-coder agreement of the themes. Afterwards, labels and names were assigned to the extracted themes reflecting the goal of the study. Finally, a report including themes and their descriptions was provided. Two sample responses, from interviews and narratives, supporting each theme were also presented in the report.

To warrant the rigor of the findings, member-checking was done by inviting the participants to check, comment on, and confirm the extracted themes, thereby securing data credibility. Moreover, an external researcher with a university position (assistant professor) was asked to examine the data analysis as a measure of confirmability. Inter-coder agreement analysis was conducted using Cohen's Kappa to establish the dependability of the findings (.92). Transferability was confirmed by a detailed description of the background, methodology, and data collection/analysis of the study to allow future researchers to easily replicate the study from the thick description. In this study, the researchers took an outsider positionality in assembling and scrutinizing the data. Neutrality and objectivity were sought by putting personal beliefs and experiences aside from the data. Nevertheless, claiming absolute objectivity is not tenable in qualitative research, by nature (Lim, 2025).

4 Findings

Thematic analysis of the interview and narrative frame data regarding the influence of AI adoption on EFL students' absenteeism and boredom endorsed the potential of AI technologies in reducing both variables. Five major themes were extracted from the data (Table 1).

Table 1

The Effects of AI Adoption on Learners' Absenteeism and Boredom

#	Extracted Theme	Sample Excerpt
1	Offering Personalized Learning	"*AI tools offer personalized content that aligns with learners' needs, styles, and preferences. In such context, one feels connected to the course and shows more passion to attend the class energetically*" (S19).
2	Increasing Classroom Engagement	"*AI tools have several potentials and functions, which can deeply engage EFL students in the classroom process. Activities offered by AI bots can be really novel for learners making them enjoy and attend the class and feel less bored*" (S20).
3	Providing Instant and Tailored Feedback	"*AI tools offer instant feedback on exercises and practices. This helps learners see their progress and performance over time and feel motivated to learn and attend the class*" (S27).
4	Diversifying Learning Materials	"*AI tools go beyond traditional text-book materials to include multimodal content for learning different language skills and sub-skills in an engaging way. With such innovative materials, learners are less likely to feel bored and avoid class attendance*" (S35).
5	Granting Agency and Autonomy	"*a sense of agency and independence in when and how to use them in or outside the classroom. Such freedom reduces learners' boredom and absenteeism*" (S27).

As the first venue of impact, the participants argued that using AI technologies could 'offer personalized learning' for learners, and this reduced their absenteeism and boredom in the classroom. As S19 stated, "*AI tools offer personalized content that aligns with learners' needs, styles, and preferences. In such context, one feels connected to the course and shows more passion to attend the class energetically*" (Interview). Another student declared that "*when we see the course and content are tailored to our level and needs, we feel less bored to evade from the class. Absenteeism is lower in AI-based classes as they are new*" (S6, Narrative Frame). So, the personalization capacity of AI tools was perceived by the participants to be a minimizer of negative emotions and behaviors in at-risk students in this study.

The second theme pertained to the potential of AI tools in 'increasing classroom engagement' of the learners. According to S16, "*AI tools are really interesting and engaging for young learners. Those at risk and lower levels may become immersed in the classroom activities mediated by AI tools. Therefore, boredom and absenteeism reduce after a while*" (Interview). To elucidate this opinion further, a participant declared, "*AI tools have several potentials and functions, which can deeply engage EFL students in the classroom process. Activities offered by AI bots can be really novel for learners making them enjoy and attend the class and feel less bored*" (S20, Narrative Frame). Feedback practices and capacities of AI technologies were the focus of the third theme of this study. Particularly, it was commonly stated that AI tools reduce students' absenteeism and boredom by 'providing instant and tailored feedback' on their performance and queries. As S27 declared in the interview, "*AI tools offer instant feedback on exercises and practices. This helps learners see their progress and performance over time and feel motivated to learn and attend the class*". Additionally, one of the participants highlighted the potential of AI-driven feedback by relating that "*AI tools can provide feedback based on learners' level and this ability decrease negative feelings and behaviors like boredom and absenteeism*" (S8,

Narrative Frame). This theme reflects on of the core potentials of AI tools that outperform traditional instruction and feedback practices. The dependency of L2 education to constant feedback provision is also implied by the participants.

The next way in which AI tools could reduce at-risk EFL students' absenteeism and boredom was by 'diversifying learning materials' in the class. In this regard, a student stated, "*AI technologies keep the class content and materials fresh by their wide range of resources in different modalities. There are audios, videos, and images that diversify the course content and reduce boredom and absenteeism*" (S32, Interview). Also, it was argued that "*AI tools go beyond traditional text-book materials to include multimodal content for learning different language skills and sub-skills in an engaging way. With such innovative materials, learners are less likely to feel bored and avoid class attendance*" (S35, Narrative Frame). The analysis reveals that students are highly engrossed by the diversity and accessibility of a mass of materials for learning through AI technologies.

Finally, the analysis indicated that by 'granting agency and autonomy' to learners, AI technologies can decrease their sense of boredom and absenteeism. As many AI tools are user-directed, they give one "*a sense of agency and independence in when and how to use them in or outside the classroom. Such freedom reduces learners' boredom and absenteeism*" (S27, Interview). By comparing AI-mediated education with traditional teacher-centered education, one of the participants declared that "*AI tools give us autonomy and control over our learning process that was previously absent. Now, we are engaged in the course and feel positive. Boredom and absenteeism are really limited with diversity of AI bots and their capacities*" (S13, Narrative Frame). In this theme, the students show a passion for agency and self-directed learning even in the context of AI. Such independence was implied to prevent negative emotions and behaviors in students when they saw themselves active agents of their education.

In sum, the results of an iterative data analysis of interviews and narrative frame indicated five ways in which the adoption of AI tools could reduce at risk EFL students' boredom and absenteeism by 1) offering personalized learning, 2) increasing classroom engagement, 3) providing instant and tailored feedback, 4) diversifying learning materials, and 5) granting agency and autonomy.

5 Discussion

This study aimed to examine the role of AI adoption in at-risk EFL students' absenteeism and boredom. The findings indicated five ways in which AI tools could reduce both constructs. The first declared way by which AI technologies could play a role in learner absenteeism and boredom was by offering personalized learning, which is in line with previous studies that highlighted such AI capacity in EFL education (e.g., Kohnke et al., 2023; Guo et al., 2023; Teng, 2024, 2025; Xu et al., 2025). The minimizing role of AI in EFL learners' boredom also concurs with Derakhshan and Park (2026b), who empirically reported that multimodal AI tools could reduce negative achievement emotions, including boredom. The study extends the literature by providing new insights about the interplay of AI and absenteeism. Positive appraisals of EFL students regarding AI technologies could justify the study, which echoes CVT of emotions (Pekrun, 2006). The potential of AI tools in providing a person-directed and personalized L2 education further explains this theme. Specific characteristics of at-risk students may have played a role in perceiving AI tools influential in regulating emotions and behaviors in this study.

Our study also revealed that by increasing classroom engagement, AI tools could reduce absenteeism and boredom among learners, which is consistent with previous research (e.g., Guo, 2021; Zhou & Hou, 2024). This opposes the claimed poor performance and engagement of at-risk students in the classrooms. The novel and interesting atmosphere and capacities of AI tools may be the reason behind such classroom engagement that ultimately reduced absenteeism and boredom in learners. The AI's non-judgmental feedback and 24/7 availability may have reduced the participants' psychological vulnerability, which can ultimately lead to absenteeism and boredom reduction. The diversity of AI bots and chatbots catering to

different academic purposes may also be a justification for more student engagement in the classroom and for preventing their negative emotions and behaviors. Perhaps the students were previously aware of the value of AI technologies and had the literacy to use them. This interpretation resonates with the perceived value component of CVT (Pekrun, 2006). The preventive role of positive emotions (e.g., engagement) in learners' negative emotions/behaviors (e.g., absenteeism and boredom) can be attributed to the contagious and transferable nature of AI-induced emotions. Hence, the study implies a linkage among learner emotions even in the context of AI.

Another venue in which AI tools could decrease learners' absenteeism and boredom was by providing them with instant and tailored feedback, a finding in line with prior research (e.g., Muñoz et al., 2025; Teng, 2026; Teng & Huang; 2026; Weng & Chiu, 2023). This theme underscores the role of external factors on learners' boredom and absenteeism, as endorsed in the literature (Li et al., 2025; Nakamura et al., 2021). While prior research has dealt with the underlying factors of these two constructs, our study provided a clear example of how an external technology-related factor could affect them. The capacity of AI to provide feedback was highlighted in this finding, and seemed to be a striking factor for at-risk students. The accuracy, novelty, and speed of AI-generated feedback could have possibly persuaded learners to attend more classes and feel more passionate during instruction. Such a positive view may also be due to the participants' receptiveness to change and innovation using AI. Again, this can be explained by the perceived value of AI adoption, a claim supported by CVT (Pekrun, 2006). The study uniquely shows that feedback practices and feedback quality may function as mitigators of student absenteeism and boredom when AI is adopted properly and professionally. Another finding was that by providing diversified learning materials, AI technologies could reduce EFL learners' absenteeism and boredom. The study agrees with Huang et al. (2023), who declared that AI technologies offer unlimited materials and content to learners. While the impact of classroom materials on absenteeism and boredom is in line with the literature, the AI dimension of such materials makes this study different from prior studies. The capacity of AI tools to generate content and materials quickly and in tune with learners' needs and interests may explain this theme. The adaptability of AI-generated materials may also be a reason. Another explanation is that, as expected, using old and rigid classroom materials in L2 classes leads to boredom and class avoidance by learners (Zhao & Wang, 2025). Therefore, by using AI tools, teachers can add enjoyment and spirit to the materials and persuade learners to attend the classroom.

Finally, our study showed that by granting agency and autonomy to learners, AI technologies could reduce their absenteeism and boredom. This resembles previous studies on how AI tools can offer autonomy to EFL students (e.g., Huang et al., 2023). However, this study varies from the literature in that it asserts that AI-offered autonomy has the potential to regulate learners' emotions and behaviors in the classroom (i.e., absenteeism and boredom). Emphasis on autonomy and agency reflects CVT's perceived controllability of an activity, which shapes one's emotions and behaviors. It seems that the participants had control and autonomy in using AI technologies in the classroom, hence they went through positive experiences that prevented their boredom and absenteeism. The study foregrounds autonomy as a key to engaging learners in the classroom and encourages them to willingly show up. Consequently, it is important to strike a balance between integrating AI technologies and granting autonomy and agency to learners at the same time. This can establish a democratic learning atmosphere, where negative emotions and behaviors like absenteeism and boredom diminish significantly. Overall, the study asserts that AI tools could prevent learner absenteeism and boredom by influencing micro-level practices, materials, and behaviors. However, the mechanism of such influence is left to future researchers.

6 Conclusion and Implications

This study explored how AI adoption could reduce at-risk EFL students' absenteeism and boredom. The findings indicated different contributions from AI technologies to both constructs. It can be concluded

that learner emotions and behaviors can be regulated through AI technologies, especially in at-risk EFL contexts. The potential of AI-mediated L2 education may go beyond immediate classroom and language skill development to include emotionality as well. Based on the findings, it can be asserted that despite the challenges of teaching at-risk learners, it is possible to manage their negative emotions and attitudes, encouraging them to actively attend and participate in the class via AI integration. It is also implied that by affecting classroom-level practices and behaviors of learners, AI tools can shape their emotions. The engaging nature of AI tools may motivate at-risk learners to enjoy the classes and attend them willingly.

The findings support and expand the CVT of emotions by arguing that at-risk learners' appraisals of AI technologies mediate their emotions and practices in the classroom. The emotional side of AI adoption is also highlighted in this study, which may contribute to the psychology of L2 education and the positive psychology perspective. The affective dimension of L2 education is transferable to at-risk contexts and AI-mediated modes of delivery. The study is also significant for underscoring the utility of educational technology in handling challenges common in teaching at-risk learners. An emotional component is conceptualized for AI-mediated L2 education in this study. At-risk learners may draw on the findings to use AI technologies more in their L2 learning process as mitigators of their negative emotions and behaviors. Their AI awareness and literacy may rise in light of the study, making them more willing to employ AI bots and chatbots in the future. EFL teachers can devise and employ engaging AI-generated activities and materials in classes with at-risk students to reduce their negative feelings and help them grow academically. For example, they can use AI-based feedback and scoring to add novelty to L2 classes and make learners enjoy and immerse themselves in the course. Games recommended by AL can be used by teachers to increase learner participation, interaction, and engagement. Teachers' knowledge of AI's potential for emotion regulation is enhanced by the findings of the study as well. As at-risk learners may need more attention and care, teacher educators can design courses for teachers to train them on how to integrate AI technologies in the classes to better regulate emotionality and behavior. AI-related workshops are suggested in this regard. Policymakers and educational administrators for at-risk contexts can use the findings to renovate and revisit their plans for integrating technology into L2 education and dealing with learner emotions using AI tools. Technical and psychological supports can be provided for such learners to protect them against risks.

7 Limitations and Suggestions for Future Research

Several limitations have been identified in this study. For example, the sample of the study was small, but it could be expanded in the future to gain richer data from a larger sample size. Convenience sampling may have jeopardized the representativeness of the sample. Future scholars are suggested to use sampling techniques that include diverse perspectives from diverse samples. Limiting the study to absenteeism and boredom can be taken care of in the future by exploring the contributions of AI to regulating other learner emotions as well. The study took a pure qualitative approach without quantification to show how much absenteeism and boredom changed through AI adoption. So, a good line for future research is to use mixed-methods research designs using various tools for collecting the data. Such a triangulated view is significant for stepping beyond personal experiences and perceptions captured only qualitatively. The mediating role of AI familiarity was ignored in the study, and can be examined and controlled in the future. The fluctuations of absenteeism and boredom could be better captured through longitudinal studies in the future. Cross-cultural research is also suggested to obtain a more comprehensive model of the role of AI adoption in reducing at-risk learners' absenteeism and boredom. The perspective of EFL teachers can be added to that of learners in a future comparative study. The study can be replicated with other sensitive groups of EFL learners, especially those in under-resourced and under-explored contexts. Moreover, the impact of social class and economic background on at-risk learners' perceived absenteeism and boredom can be further explored in the context of AI. Reasons for absenteeism and boredom are

also advised to be studied in the future, comparing traditional education with AI-mediated education. Researching EFL learners' emotion regulation strategies for managing absenteeism and boredom is also suggested to future scholars. These future research directions have the potential to contribute to the emotional landscape of AI-mediated L2 education in contexts beyond normal education.

Conflicts of interest/Competing interests

The authors declare that they have no conflicts of interest.

Data Availability

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

Authors' contribution

All authors have materially participated in the research and article preparation. Additionally, all authors have approved the final article.

Appendix

Interview Questions

A) Demographic Information:

1. Age:
2. Gender:
3. AI Familiarity Level:
4. English Proficiency Level:
5. Educational Degree:
6. Parents' Education:
7. Parents' Occupation:
8. Family Income:

B) Interview Questions:

1. Which AI tools have you used to learn English? Did you receive any training?
2. How often and why did you use them?
3. In which areas of your L2 education do you use AI tools? Which skills and sub-skills?
4. How does the use of AI tools affect your absenteeism decisions and behaviors?
5. In what ways, AI adoption affects your sense of boredom in L2 classes? Please explain your perspective with examples.

C) Narrative Frame:

In my L2 classes, I have frequently used AI bots and chatbots such as…… Based on my experience, I think adopting AI technologies could affect my absenteeism thinking and decision by…… The use of AI also reduced my sense of boredom in the classroom by……....

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