

Beyond the Lecture Hall: Access, Usefulness, and Personalization in Algerian AI-Driven EFL Learning

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Abstract

This study inquires Algerian pre-service teachers' attitudes and practices concerning the use of artificial intelligence (AI) technologies in English as Foreign Language (EFL) learning. The study is designed to investigate AI integration, perceived usefulness, personalization traits, and corresponding concerns in an EFL context. Grounded in the theoretical framework of Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the personalization theory, an attitudinal questionnaire was distributed to 132 students at the Teachers' Training School (ENS), Constantine, Algeria. Findings reveal promising awareness towards AI implementation, notably for enhancing critical thinking. Average trust in AI-driven content and restricted approval on AI's potential to satisfy cultural and learner-specific needs signal the inconsistency in personalization. Minimal access to AI tools and scarce institutional endorsement are also prominently inadequate. Despite ethical gaps and logistic limitations, over one-half of the participants plan to uphold the practice of using and advocating AI for EFL learning purposes. These insights highlight the need for: inclusive policymaking, AI literacy curricula, culturally –sensitive AI models, professional training for educators, and upgraded infrastructure to establish unbiased ethical AI use. The study provides an insight for future empirical extension in AI-driven EFL learning in Algerian higher education as it is in its nascent phase.

Keywords; Algerian Higher Education; Artificial Intelligence; English as a Foreign Language; Personalization; Technology Acceptance.

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Introduction

Academia across the globe was the most antagonistically affected during and after the pandemic upheavals. The access to personalized, learner-centered instruction is, now, being democratized by the digital advances and artificial intelligence (AI) towards an utterly divergent global educational trend. AI-powered personalized learning platforms, thus, have reached popularity as efficient tools in education, prominently in Teaching English as a Foreign Language (TEFL). Research has revealed how these platforms can improve learning outcomes, for which the extended mind model of Clark & Chalmers (1998) serves as the theoretical background of in-depth research for the last decade. Highlighting the utilization of technical tools that can augment the efficacy of particular cognitive processes notably learning, this theory asserts that these mental processes encompass not only bodily experience-related procedures but rather involve diverse peripheral entities, including materials, and technological devices. This is vital as to consider that one of the main objectives of cognitive science is establishing methods and tools having the potential to elicit one's cognitive capacity (Roco and Bainbridge, 2013). Technological tools, such as AI, will therefore reinforce cognition.

This paper suggests AI as a transformative solution while grounding the analysis in Algeria's socio-cultural, infrastructural, and pedagogical realities. Algeria's higher education system, with over 1.8 million students enrolling in 106 universities, encounters pedagogical rigidity, resource limitations, and overcrowded classes. The "one-size-fits-all" teaching methods overshadowing the Algerian lecture halls are at odds with the demands of a tech-native student era. Furthermore, class sizes frequently surpass 50 students per instructor, noticeably at urban institutions of Algiers, Oran, and Constantine, which hinders individualized learning. Rigid curricula, meanwhile, prioritize memorization over critical thinking which impedes students' readiness for global competitiveness and digital entrepreneurship. These barriers can be mitigated via AI-based personalized learning, which adjusts content, pacing, and assessment to each learner's needs, abilities, and contexts; AI-driven systems have shown promise in raising academic achievement, retention, and engagement in limited resource settings (Lin et al., 2023). However, Algeria's adoption of these technologies is still in its infancy. This inertia curtails Algeria's 2030 vision of modernizing academia in higher education, especially regarding TEFL, and narrows down students' chances to join a rapidly digitalizing workforce. A contextualized shift in paradigm is, thus, required by which AI-driven individualized platforms can act as a catalyst for inclusive and adaptive pedagogical processes. This paper, thereby, inquires the potential of artificial intelligence (AI) to provide such contextualization and revolutionize TEFL in Algerian higher education via overcoming conventional lecture-based methods. It adds to larger discussions on educational equity, technological contribution in EFL, and sustainable development in the South by bridging the gap between Algeria's local aspirations and global AI advancements. It further offers practical insights for technologists, educators, and policymakers to frame more robust infrastructure for a new inclusive growth of Algeria's higher education.

Another gap to be considered in this paper is poor research on learner-based insights through which learners' perspectives are regarded. Divergent inquiries have been conducted to probe teachers' attitudes (Achili&Zerouki, 2024; Othmane, 2024) while learners' AI-driven academic performance and attitudinal traits were inadequately investigated (Boukhelkhal,2025; Sebbah, 2025) but there is still a dearth of synthesis displaying the full scope of AI in individualized language learning trajectories. By extending a coherent synthesis of the existing literature and empirical data to highlight the ramifications of AI adoption in language instruction from a learner lens, this conceptual paper targets this gap. Therefore, the alignment between the potential of AI for personalized learning and the complex ethical and technological issues shapes another aim of this investigation.

By taking part in this discussion, the article not only works through the challenges of embedding AI in EFL university contexts, but it also offers a roadmap to balance innovation and human values in Algerian academia. The questions of this inquiry, thus, can be categorized into one central question and two questions for extended-research focus:

1. How do Algerian EFL university students perceive and interact with mainstreaming AI-based learning tools in terms of usefulness, personalization, and engagement?
2. What impactful societal, institutional, and pedagogical challenges encounter the integration of AI in Algerian TEFL higher education?
3. What ethical implications are elicited from AI-driven implementation in Algerian TEFL higher education, and what recommended strategies can be suggested to overcome these issues?

1. Review of Literature

Personalized learning transitioned from a traditional monolithic model, which disregarded learner variability and preferences, towards a learner-focused approach through the emerging trends in cognitive science and learning theories. This new trend attributes significance to adaptability and inclusivity, tailoring learner-responsive instruction (Jordan et al., 2020; Orina et al., 2021; Lu et al., 2023). As an educational philosophy, individualizing instruction prioritizes the learner's pedagogical needs. It extends beyond differentiation by actively enrolling students as co-authors of their learning trajectories emphasizing their competencies and preferences when constructing curricula (Bartle, 2015). By integrating diverse methods; visual, auditory, or even kinesthetic, this approach caters varied learning styles (Kupchyk & Litvinchuk, 2021).

AI's broader role in education evolved from its origins (McCarthy, 2006) to the rigorous, adaptive integration of individualizing tools (Vera, 2023). Grounded in constructivist and learner-focused paradigms, AI contribution in education has evolved from nascent instruction to establishing responsive language learning tools. Constructivist Learning Theory, originating from Piaget's and Vygotsky's works, entails constructing knowledge via experiential learning and post-experience reflection (Willis, 2023). Within the scope of AI, its tools and gadgets can provide a complete framework based on the student's prior knowledge to fit content to purpose and generate a more personalized learning environment. Subsequent to constructivism, Panda (2024) identified three major phases to this elaboration:

- **1960-1970s:** The onset of computer-assisted pedagogy setups, notably PLATO to individualise learning.
- **1980s-1990s:** Advancement of Intelligent Tutoring Systems (ITS)
- **From 2000 onward:** Machine learning and natural language processing (NLP) have revolutionized AI applications through which learners' needs are perceived as the portal for customised learning.

The evolution of AI in education, nevertheless, has adhered to a divergent path according to Ouyang & Jiao (2021). From **AI-Directed Learning based on Behaviorism** (prototype AI systems operated as mentors, adopting behaviorist precepts to provide automated instruction), through **AI-Supported Learning** which aligned with constructivism and initiated a new dynamism of collaboration with learners via interactivity to their individual needs, the subsequent phase is **AI-Empowered Learning** stressing adaptability and responsiveness of learners in leading their educational trajectories via advanced AI technologies.

The amplified impact of AI on EFL teaching/learning has garnered pivotal scholarly attention, notably in relation to writing, critical thinking, and personalized learning, hence, using AI tools like Automatic Evaluation Systems (AESs) to boost writing and speaking skills has been evidenced by Gao (2021) despite feedback quality concerns (Liu & Kunnan, 2016).

The proliferation of AI in EFL classroom, nonetheless, engenders risks like hindering critical thinking and human interaction along with elevated algorithmic bias, and data privacy issues (Merdassi & Belmekki, 2024). Persistent practitioners' skepticism about the educational value of AI catalyzes ongoing reassessment notably in professional sectors like medicine and finance (Yalkinalp, 2024), Omirali et al.(2025) further discussed how students' optimistic perceptions about intelligent agents may fail to correspond to their trust in AI which leads to bypassing the agent and nullifying its benefits. A balanced and cautious approach is, therefore, required to ensure responsible utilization of AI in EFL education, especially in the Algerian context where existing research is still limited regarding AI drawbacks, asserted by Merdassi and Belmekki (2024).

Algerian scholarly Studies underline AI's benefits, during COVID-19, and its increasing adoption in education (Zitouni, 2022). Learners' attitudes were probed in numerous surveys; students, in the prevailing literature, claimed positive attitudes toward AI-based EFL learning (Guemide & Sahraoui, 2023; Sebbah, 2025). According to Benguedda and Kaid(2024) Algerian educators acknowledge concerns about ethical issues triggered by the overdependence on AI that could hinder students' analytical skills. In a study on students' perceptions about integrating AI in their learning, Boukhelkhal administered a survey to EFL students at the University of Medea (2025); findings illustrated extensive adoption of AI by Algerian students, notably ChatGPT, to enhance writing, grammar, and vocabulary. They regarded AI-based learning positively as it provides personalized assistance and timely feedback. Nonetheless, reservations of overreliance on AI, impaired critical thinking, inaccurate information content, access limitation on tools, and scarcity of supervision on responsible use.

2. Methodology

2.1 Research Design

This study employed a quantitative, non-experimental, descriptive- quantitative design to examine students' perceptions of using AI tools for personalized EFL learning in higher education. A structured, self-administered questionnaire was developed based on a theoretical model combining the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the extended construct of Perceived Personalization (PP).

2.2 Theoretical Framework

This study is grounded in a hybrid theoretical framework that combines the **Technology Acceptance Model (TAM)** and the **Unified Theory of Acceptance and Use of Technology (UTAUT)**, with integrating additional construct (**Perceived Personalization**) to highlight role AI contribution in personalizing EFL learning in higher education.

2.2.1 Technology Acceptance Model (TAM)

Developed by Davis in 1989 (Marikyan & Papagiannidis, 2024), it asserts technology acceptance to be shaped by:

- Perceived Usefulness (**PU**) : Belief degree that using a system enhances performance.
- Perceived Ease of Use (**PEOU**): Belief degree that using a system would be free of effort while usable at the same time.
- Behavioral Intention (**BI**): the intention to use the system, influenced by PU and PEOU which is labeled.
- Trust in Technology (**TT**):It is frequently used as an extension to the model.

2.2.2 *Unified Theory of Acceptance and Use of Technology (UTAUT)*

Proposed by Venkatesh et al. (2003; cited in Marikyan & Papagiannidis, 2023), UTAUT deepens TAM by incorporating external factors such as:

- Performance Expectancy (**PE**): The belief that technology improves task performance.
- Effort Expectancy (**EE**): To stress the perceived ease, time, and energy linked to technology use.
- Social Influence (**SI**): To address other participants' pressure using technology.
- Facilitating Conditions (**FC**): Reveal the perceived organizational and technical infrastructure support provided.

Therefore, UTAUT enriches the framework by examining contextual and institutional variables influencing technology integration, especially in educational settings.

2.2.3. *Perceived Personalization (PP)*

The extent to which AI tools adapt learning content and feedback to individual learners' needs, preferences, and proficiency levels. This dimension has been added to comprehensively address individualising AI in education. Personalization in the current analysis is, subsequently, being dealt with as **functional** (students' language proficiency and skills) and **contextual** (Students' cultural and educational backgrounds)

The integrated model allows the study to assess both **internal** individual acceptance factors and **external** contextual/institutional factors, along with introducing a **distinctive** dimension of personalization central to AI application in EFL.

2.3 *Population and Sampling*

EFL Students at the Teachers' Training School of Constantine- Asia Djebbar- were targeted via a **purposive sampling** technique. Purposive samples are selected when seeking depth of qualitative insight by intentionally appointing participants who are more relevant and knowledgeable about the topic (Aouiche, 2018). In the current inquiry, students received a questionnaire to filter non- AI users; this was mainly done to ensure data reliability via the selection of participants familiar with AI in educational contexts. The sample, ultimately, consisted of 132 EFL students ranging from the 2nd to the 5th year.

2.4 *Research Tool (Student Questionnaire)*

The primary data collection tool was a student questionnaire consisting of:

- Demographic Information: Age, gender, level of study, prior AI experience.
- AI Usage Profile: Tools, frequency, contexts of use.
- Theoretical framework (PU, PEOU, BI, PE, EE, SI, FC,TT, PP) explored via a 5-point Likert scale
- Open-ended Questions to qualitatively illustrate learning experiences.

A pilot study (n = 15) was conducted to refine item clarity, language, and survey flow. The questionnaire, therefore, was distributed electronically via Google Forms after a validity check through expert review by specialists in applied linguistics and educational technology.

3. Findings and Interpretations

3.1 Demographics and Prior Experience with AI

Table 01: Demographics and Exposure to AI

Items	Choices	Number	Percentage
Gender	Male	15	11.36%
	Female	117	88.63%
Years of Studying English at ENSC	From 1-2 y	07	5.30%
	From 3-5 y	125	94.69%
English Proficiency (self-rated)	Intermediate	64	48.48%
	Advanced	54	40.90%
	Proficient	14	10.60 %
Prior Use of AI in EFL Learning	Yes	127	96.21 %
	No	05	3.78%

Claiming median-to-advanced language proficiency, the majority of the sample well-reflected the cumulative academic experience that can be demonstrated through the years of study; 93.13% of the sample was enrolled in 3rd, 4th, and 5th years (15 males and 117 females). Respondents confirmed their integration of AI tools in their learning trajectories with an overwhelming majority of 96.21%. Despite this notability, questions about students' responsiveness to AI-based content and their ability to discern valid information remain prominent.

3.2 Students' Perceived Usefulness of AI: (PU)

The students' responses reflected a relatively moderate to high scores on a Likert scale, implying positive attitudes without reaching maximum satisfaction or conviction.

Table 02: Degrees of Perceived Usefulness (PU)

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
AI has been an assistant to me in learning English more efficiently which augments my learning outcomes	10	7.57%	09	6.81 %	18	13.63%	83	62.87%	12	9.09.%
My language comprehension is being enhanced through using AI tools	08	6.06%	06	4.54%	14	10.60%	91	68.93%	13	9.84%
I am more skilled at analyzing complex problems since using AI	05	3.78%	06	4.54%	34	25.75%	82	62.12%	05	3.78%

Findings revealed broad positive PU through the elevated percentages of agreement on the three statements (table02), while very low strong agreement may indicate either cautious endorsement or limited experience. Students' awareness of AI-based contribution in their learning is shown with a sense of uncertainty plausibly generated from poor exposure or thoughtful reflection rather than passive agreement. A noteworthy comment, nevertheless, is the marginal moderate amount of being neutral when responding to statement03 (25.75%); this indecisive attitude aligns with the previous interpretation of skepticism and finite practice of AI-driven tasks.

3.3 Performance Expectancy (PE)

Table 03: Degrees of Performance Expectancy (PE) Degrees

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
AI adapts to my learning pace, emphasizing areas needed to be enhanced.	10	7.57%	22	16.66%	25	18.93%	57	43.18%	18	13.63%
AI feedback boosts my EFL learning skills.	06	4.54%	10	7.57%	30	22.72%	50	37.87%	34	25.75%
AI challenges my existing knowledge and prompts deeper thinking	10	7.57%	24	18.18%	26	19.69%	54	40.90%	18	13.63%

This table discloses the amounts of expectations participants have towards AI potential to elevate their performance while learning. Fluctuating percentages characterized findings: the magnitude of agreement (Agree+ strongly agree) in the three statements represented a narrow majority with 56.63%, 63.62%, and 54.63% in sequence. This suggests that students are tentatively confident about the outcomes of utilizing AI in their learning. It can also indicate effects of a transitional phase through which students are experiencing the minimum of AI-based learning and not noticing, yet, its optimized performance enhancement. The mildly evident neutral responses can feasibly confirm the prior suggestions; students lack sufficient training and access to AI tools which minimizes their confidence towards its performance gains. Some participants went further by asserting disagreement about the potential of AI as an adaptive responsive tool and critical-thinking stimulus in the first then the third statement wherein a quarter of the sample, strongly or slightly, denied this prospect.

3.4 .Perceived Ease of Use (PEOU)

Table 04: Degrees of Perceived Ease of Use (PEOU)

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
AI tools I use are user-friendly	04	3.03%	00	0%	40	30.30%	56	42.42%	32	24.24%
AI tools are easy to learn and operate.	12	9.09%	31	23.48%	04	3.03%	65	49.24%	20	15.15%
I need help when I am using AI for learning English	05	3.78%	56	42.42%	33	25%	27	20.45%	11	8.33%

The usability of AI- driven personalising tools was probed in this section. Positive perceptions, but not consistent, were delivered by respondents. Appreciable portion of them, in statement02, appreciate the ease of AI tools (half of the sample agreed on that with extra stronger alignment by 15.15%) with over 42% refuting the need for help (statement 03) revealing a favorable technology acceptance. The neutral responses (25%) suggest indecision or inadequate experience to assertively perceive the usability of AI tools. , the 27% who acknowledged needing help, nonetheless, signals AI literacy issues only. These findings highlight the vital contribution that methodical orientation can provide, especially for students who are less confident or experienced in using AI technologies for language learning.

3.5 Effort Expectancy (EE)

Table 05: Degrees of Effort Expectancy (EE)

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
Using AI is effortless	06	4.54%	17	12.87%	45	34.09%	55	41.66%	09	6.81%
AI tools are time-saving	04	3.03%	14	10.60%	07	5.30%	93	70.45%	14	10.60%
I can use AI without much struggle.	11	8.33%	31	23.48%	05	3.78%	66	50%	19	14.39%

The statements embedded in this section inquire students' expectations of the effort allocated with utilizing AI in the learning process. Extensive agreement was asserted about the effortless nature of using AI in learning EFL; a thorough majority, with over 70%, acknowledging the time-efficient outcomes subsequent to AI-assisted learning, alongside 50% confirming its struggle-free implementation. Anomalies, nevertheless, were apparent in the notable percentages of disagreement about the same statement (03) through which 23.48% declared the hardship they encounter when using AI. This, again, stems from learners' unfamiliarity with digitalization and lack of training. The nonpartisan behaviour reflected in 34.09% of the sample, asserting a neutral response, is another validation to the preceding findings that some students are being reflective or uncertain about AI integration.

3.6 Social Influence (SI)

Table 06: Degrees of Social Influence (SI)

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
Key individuals in my life suggest using AI to enhance my EFL learning	20	15.15%	43	32.57%	22	16.66%	31	23.48%	16	12.12%
My teachers advocate using AI in learning English	33	25%	54	40.90%	19	14.39%	16	12.12%	10	7.57%
My peers' use of AI tools motivates me to use them	10	7.57%	12	9.09%	20	15.15%	71	53.78%	19	14.39%

In accordance with TAM-UTAUT framework established for the analysis, findings in table 06 demonstrate poor **SI** with teachers and significant others (only 35.6% and 19.69% recognize the support of close associates and teachers), highlighting restricted support for AI use in EFL learning. The perceived motivation from peers' utilization of AI, nonetheless, generates a **peer-based social influence (PBSI)** considering the overall agreement of the sample (53.78% and 14.39%). This polemic signals other stakeholders' unawareness of AI-powered learning vitalness, and, therefore, there is an urge to introduce institutional support and educators' involvement to stimulate students' positive perceptions via adopting supervised implementation of AI in EFL learning.

These students' proactive communities can be key determinants of AI integration in Algerian higher education despite the scarcity of formal endorsement. The lack of supervision, though, will generate inconsistent or superficial use of AI, minimizing its pedagogical impact.

3.7 Facilitating Conditions (FC)

Findings in table 07 markedly display the scarce in institutional and governmental advocacy. Students, with a compelling disagreement of 98.48%; strongly denied institutional endorsement besides an apparent disagreement about receiving technical aid when needed (73.48%). This gap in public support is feasibly akin to the infancy phase the Algerian higher education is experiencing with AI integration.

Table 07: Degrees of Facilitating Conditions (FC)

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
I have necessary unlimited access to AI tools	35	26.51%	42	31.81%	05	3.78%	33	25%	17	12.87%
My university offers sufficient aid for integrating AI tools in classroom	130	98.48%	02	1.51%	00	0%	00	0%	00	0%
Technical advocacy is provided when I face issues using AI tools	97	73.48%	15	11.36%	06	4.54	14	10.60%	00	0%

Students, though, revealed relative agreement about having the access to the required material, internet and tools. This, however, can be a barrier to impactful personalization of learning via AI; the facilitating conditions as a significant component of **UTAUT** model reflect the capability of learners to individualize their learning trajectories which has been extensively refuted by more than half of the sample (between strong and simple disagreement)

3.8 Behavioral Intentions (BI) towards AI Integration in Learning

Regardless students' priors claims of insufficient public support and access challenges, they revealed relatively notable intentions to continue utilizing AI (57.57% as a broad agreement), this may be associated with students acceptance of AI which was previously asserted in substantial levels of Perceived Usefulness (**PU**) – table01-and Performance Expectancy (**PE**)-table02-

Table 08: Degrees of Behavioral Intentions (BI)

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
It is expected that I continue using AI tools to elevate my proficiency level	12	9.09%	18	13.63%	26	19.69%	44	33.33%	32	24.24%
AI-based personalizing tools should be incorporated into pedagogical settings to promote critical thinking	10	7.57%	28	21.21%	32	24.24%	32	24.24%	30	22.72%
I am likely to recommend AI tools/gadgets to my peers for EFL learning	10	7.57%	12	9.09%	20	15.15%	51	38.63%	39	29.54%

Students, further, insist on sharing their AI- driven experiences with peers via suggesting their most favorable tools to their peers (overall agreement of 68.17%). This is another plausible indicator of elevated proportions of **PU** (TAM/UTAUT) among participants, amplifying the need to establish stronger public endorsement that is already requested in statement 02: Aspirations of incorporating AI- powered personalization tools received moderate percentages (46.96%) with a noteworthy proportion (24.24%) disclosing neutral attitudes and highlighting the recurrent students' uncertainty about AI impact on their learning.

3.9 Perceived Personalization (PP)

The table bellow displays the proportions of **perceived personalization** that students receive from implementing AI in their learning trajectories. Average to high degrees of agreement in the two first statements targeting skill personalization (65.14%, 46.96 between strong and simple agreement) along with moderate neutrality in the three statements (22.72%, 28.78%, 34.84% in sequence) and the notable low consensus in the third statement, all imply that AI **functional personalization** is recognized by students to be evident and appreciated ,but **contextual personalization** (Adaptation to cultural and individual needs) requires more formal training and familiarization.

Table 09: Degrees of Perceived Personalization (PP)

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
The content of AI-powered tools matches my current proficiency level	12	9.09%	04	3.03%	30	22.72%	68	51.51%	18	13.63%
AI targets my weaknesses and strengths to boost my EFL learning	08	6.06%	24	18.18%	38	28.78%	44	33.33%	18	13.63%
AI adapts to my cultural and individual learning needs	19	14.39%	34	25.45%	46	34.84%	22	16.66%	11	8.33%

Students, at this emerging integration-stage of AI, acknowledge its responsive attributes plausibly related to Grammar, vocabulary and linguistic skills. They, Nonetheless, cannot identify AI tools as cultural-sensitive or supportive to their individual learning styles, impacting their long-term engagement and utilization of AI. In the TAM-UTAUT model, Perceived Usefulness (**PU**) and Behavioral Intention (**BI**) constructs are to be influenced which signals the vital need to construct a holistic, culturally-sensitive curricular through which AI is implemented in EFL learning contexts.

3.10 Students' Trust (TT) and Perceived Reliability of AI

Table10: Degrees of Trust and Perceived Reliability of AI

Statements	S. Disagree		Disagree		Neutral		Agree		S. Agree	
	N	%	N	%	N	%	N	%	N	%
I trust AI feedback accuracy	10	7.57%	28	21.21%	60	45.45%	24	18.18%	10	7.57%
I have confidence in using AI tools to aid my EFL learning	12	9.09%	61	46.21%	31	23.48%	22	16.66%	06	4.54%
I, frequently; feel distressed or unsure when using AI tools for EFL learning	09	6.81%	26	19.69%	65	49.24%	28	21.21%	04	3.03%

Trust, as an extension of TAM model, is a significant construct to evaluate using AI in learning. The fluctuating degrees of trust and acknowledged reliability in table 09 reveal students' consistent uncertainty or caution about adopting AI-based learning: Average to high degrees of neutrality towards the three statements were disclosed, notably with the ones linked to confidence towards the supportive nature of AI (49.24%) and trusting its content validity (45.45%); this highlights the lack of confidence in AI credibility and didactic value. Furthermore, students' incomprehension of the mechanisms of AI tools, typically generated from poor formal training and restricted exposure, was revealed in the indecisive percentages of agreement and disagreement.

Implication tied to TAM/UTAUT model can be inferred from these findings; poor trust in AI agents is negatively impactful on perceived usefulness –**PE-(TAM)** and the recognition of facilitating conditions –**FC-(UTAUT)** which would minimize other positive attitudes towards AI-driven learning and, ultimately, the use of AI as an EFL learning assistant.

3.11 Challenges and Ethical Concerns

Q1: What are the challenges you usually encounter when using AI to learn?
(Open-ended)

Tbale11: Challenges Identified

Challenges	N	%
Technical issues (e.g., bugs, poor internet)	60	45.45%
Lack of Interaction	10	7.57%
Overwhelming/ unreliable information	50	37.87%
Lack of personalization in AI responses	28	21.21%
Ethical concerns (e.g., plagiarism, bias)	38	28.78%
Difficulty in trusting AI accuracy	76	57.57%
Privacy concerns	22	16.66%
Cost (Most reliable ai tools are payed)	36	27.27%
Ai always agreeing to what I say whatever it is which is boring and makes me skeptical.	02	1.51%

Divergent barriers to AI use in EFL learning have been identified by students in this inquiry. Poor trust in both the validity of AI (57.57%) and the “*unreliable information*” (37.87%) was the major limitation students reconsider, reinforcing earlier findings in table10. The other notable hindrance is related to “*technical issues*”(45.45%) wherein students struggle with low connectivity and high “*cost*” of digitalization(27.27%) referring to the fragile intelligent infrastructure in Algeria. Students' Ethical concerns were displayed twice; “*plagiarism and bias*” with 28.78% and “*privacy*” issues with 16.66%, these moderate amounts demonstrate their cautious reflection towards using AI in the learning process. Students' reservations, furthermore, are marginally associated with inadequate **personalization** and **interaction**, feasibly interpreted by their poor preparedness to implement AI in EFL learning contexts.

Q2: How do you overcome these challenges?

Students suggested a set of remedial strategies they adopt towards the aforementioned challenges. Checking the information validity and reliability was persistently displayed by respondents; one respondent's contribution says “*I often verify AI-generated answers with other resources*”. This can be conceived as critical awareness and a coping strategy to their constant uncertainty and minimal trust discussed in earlier stages of the analysis. A subsequent strategy claimed is “*maneuvering*” and adjusting prompts utilized; one student asserts: “*Trying to explain more in order to understand me*”, emphasizing the onset of awareness towards AI mechanism and personalization potential.

Q3: Have you ever integrated AI by means of breaking academic integrity (e.g., presenting/delivering AI-created outcome as your own)?

Tbale12: Ethical Integration of AI in EFL Learning

Response	N	%
Yes	30	22.72%
No	64	48.48%
Prefer not to say	38	28.78%

Despite students' awareness of the ethical integrity displayed via the refutation of submitting AI-generated content as personal production (48.48%), there is still ambiguity about this issue revealed in the non committal responses (28.78%) and the acknowledgment of doing so by 22.72% of the sample. These findings can be an implication of either miscomprehension of "academic integrity" or normalizing the behaviour of utilizing AI to accomplish assignments. These findings call for the impulse to establish clear guiding policies and fill the institutional ethical gaps.

4 Discussion and Recommendations

Through the lenses of the Technology Acceptance Model (**TAM**), the Unified Theory of Acceptance and Use of Technology (**UTAUT**), and personalization theory, the current inquiry implemented mixed methods to investigate Algerian EFL students' use of AI-driven language learning. Participants revealed predominant optimistic outlook toward AI's practicality via appreciable degrees of Perceived Usefulness (**PU**), aligning with the UTAUT's Performance Expectancy (**PE**), this implies students' awareness about AI as an assistant in specific pedagogical tasks. The level of agreement with AI's effectiveness was, nevertheless, average, calling attention to a prudent optimism rather than complete approval. While students acknowledged AI's contribution to learning enhancement, their average consensus about performance expectancy (**PE**) signifies the rudimentary and nascent inclusion of AI-based technologies that can generate responsive language learning, notably in stimulating oral skills. This relates to existing critiques in EFL literature about AI's limited responsiveness in oral language contexts (Liu & Kunnan, 2016).

Fewer than 40% of students confirmed restricted constant access to AI tools. This scarcity inhibits the facilitating conditions (**FC**) outlined in **UTAUT** and minimizes equity and balance in technology implementation. Infrastructural challenges along with substantial shortage of public endorsement are feasibly inhibitors of positive involvement and trust in AI-driven learning. Such insights advocate for foundational and restructuring amendments to promote equity of AI-driven opportunities in EFL learning.

Personalization of learning via AI was another focal of the current inquiry. Findings disclosed AI potential to adapt to students' proficiency level rather than their cultural and educational background, suggesting functional rather than contextual personalization offered by existing AI tools. The literature on inclusive pedagogy focuses on the priority of individualizing content in accordance with students' socio-cultural identities (Bartle, 2015), a need not yet competently dealt with by AI architects, notably in Algerian contexts.

Trust was another multifaceted aspect. Students' skepticism about AI-driven content was echoed in continual double-checking of AI data. This behaviour reflects prior experiences with contradicting or erroneous AI output. Inferring to the concept of **calibrated trust in educational**

technology (Fallon et al., 2010), the suggested patterns in findings emphasize learners critical rather than dependent engagement with AI. This has been, previously discussed via Omirali et al. (2025) findings asserting that learners' engagement can be affected by their trust in the AI agent.

Based on **UTAUT** model, social influence (**SI**) primarily elicits technology adoption. The current findings revealed the absence of institutional guidance which reinforced peers' advocacy in responding to this gap, generating communities of learner-initiated, rather than policy-guided, AI implementation.

Ethical concerns presented a grey area in this study. Despite students' claims of academic integrity, a noticeable proportion declined uncovering their perspective. Such doubts stress the vital demand for clear institutional guidelines and awareness initiatives to foster integrity while using AI tools.

To resolve these limitations and maximize AI-based personalization in EFL learning, recommendations are proposed:

1. **Advocating Policy Growth:** Algerian institutions should construct comprehensive policies to establish the ethical lines of AI integration.
2. **Integrating AI Literacy:** Educational curricula should provide training on critical, ethical, and efficient use AI tools
3. **Constructing Culturally Responsive Framework:** AI designers should reconsider cultural flexibility into tool architecture to elicit further engagement and identity recognition of learners. Algerian policy makers must encourage technology architects to work on this aspect.
4. **Providing Teacher Training:** Professional growth opportunities should be offered in terms of guiding and endorsing AI implementation.
5. **Improving Infrastructure:** Investment in digital infrastructure is essential to broaden equitable access and minimize the digital divide.

Conclusion

This inquiry ensures timely insights into how Algerian EFL students are integrating AI technologies in their language learning trajectories. In order to foster autonomous and academic growth for learners, the construction of AI-driven personalized learning framework should be regarded as subordinate to the human factor and traditional methods rather than a substitute to them. The current investigation, therefore, purposed analyzing the viability and efficiency of AI-triggered learning by handling ethical concerns and motivating cooperation between the human aspect and AI-based individualized learning technologies. It may further strengthen responsible utilization of AI in Algerian education through which acting as a digital professor who tailors content based on learner's focus and/or prior learning output. A terminal contribution of the current study is bridging the gap between self-directed learner practices and institutional approaches, preparing the ground for expanded responsive, equitable, and impactful utilization of AI in Algerian EFL education and subsequent empirical validation.

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Appendix: Student Questionnaire

As AI tools are becoming part of your learning experiences, your perceptions are vital to understand how they aid or challenge these experiences, particularly in terms of engagement, skills development, and critical thinking. Your participation is valuable to gain insights into how you are using AI tools like ChatGPT, Duolingo, Grammarly, and others in your English learning journey.

Thank you for your esteemed participation in the betterment of scientific awareness

Section One: Demographics and Exposure to AI

1. **Gender** Male () Female ()
2. **Years of Studying English at ENSC**
 - From 1-2 y
 - From 3-5 y
3. **English Proficiency (self-rated)**
 - Intermediate
 - Advanced
 - Proficient

Prior Use of AI in EFL Learning

- Yes
- No

Section Two: Please rate your agreement with the statements from 1 to 5

(1. Strongly Disagree/2. Disagree/3. Neutral/4. Agree/5. Strongly Agree)

1. **Perceived Usefulness of AI**
 - My language comprehension is being enhanced through using AI tools
 - I am more skilled at analyzing complex problems since using AI
 - AI has been an assistant to me in learning English more efficiently which augments my learning outcomes
2. **Performance Expectancy**
 - AI adapts to my learning pace, emphasizing areas needed to be enhanced.
 - AI feedback boosts my EFL learning skills.
 - AI challenges my existing knowledge and prompts deeper thinking
3. **Perceived Ease of AI Use**
 - AI tools I use are user-friendly
 - AI tools are easy to learn and operate.
 - I need help when I am using AI for learning English
4. **Effort Expectancy**
 - Using AI is effortless
 - AI tools are time-saving
 - I can use AI without much struggle.
5. **Social Influence**

- Key individuals in my life suggest using AI to enhance my EFL learning.
- My teachers advocate using AI in learning English.
- My peers’ use of AI tools motivates me to use them.

6. Facilitating Conditions to AI

- I have necessary unlimited access to AI tools
- My university offers sufficient aid for integrating AI tools in classroom
- Technical advocacy is provided when I face issues using AI tools.

7. Behavioral Intention towards AI Integration in Learning

- It is expected that I continue using AI tools to elevate my proficiency level.
- AI-based personalizing tools should be incorporated into pedagogical settings to promote critical thinking.
- I am likely to recommend AI tools/gadgets to my peers for EFL learning.

8. Perceived Personalization

- The content of AI-powered tools matches my current proficiency level.
- AI targets my weaknesses and strengths to boost my EFL learning.
- AI adapts to my cultural and individual learning needs.

9. Trust in AI Tools

- I trust AI feedback accuracy.
- I have confidence in using AI tools to aid my EFL learning.
- I, frequently; feel distressed or unsure when using AI tools for EFL learning.

Section Three: Challenges and Ethical Concerns

Please answer the following questions in brief words.

1. What are the challenges you usually encounter when using AI to learn?

.....
.....

2. How do you overcome these challenges?

.....
.....

3. Have you ever integrated AI by means of breaking academic integrity (e.g., presenting/delivering AI-created outcome as your own)?

Yes	No	Prefer not to say
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