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**REVIEW ARTICLE**

**Future-Ready Pedagogy in English Language Teaching: Toward an Ethical and AI-Responsive Framework**

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**ABSTRACT**

The rapid growth of generative artificial intelligence (AI) is reshaping English language teaching (ELT) by creating new opportunities for personalized learning, feedback, communication, and digital interaction. AI-powered tools can support speaking practice, writing development, content creation, and learner autonomy. However, the increasing use of AI in education also raises important ethical concerns related to algorithmic bias, student data privacy, educational surveillance, unequal access to technology, cognitive dependency, linguistic dominance, and the environmental impact of large-scale AI systems. These concerns suggest that educational innovation should not be guided solely by technological efficiency or novelty. Instead, AI integration in ELT should be grounded in ethical principles that protect fairness, inclusion, transparency, and human agency. This conceptual paper proposes an ethical and AI-responsive framework for future-ready pedagogy in ELT. Drawing on scholarship in future-ready education, learner autonomy, digital pedagogy, human-centered AI, and intercultural communication, the paper argues that effective language education should combine learner-centered instruction, meaningful AI integration, and explicit ethical governance. The proposed framework incorporates pedagogical approaches such as AI-supported learning, flipped learning, project-based learning, inquiry-based learning, blended learning, and authentic digital interaction. It also highlights mediating learning processes including collaboration, reflection, self-regulation, inquiry, and critical evaluation of AI-generated content. The framework emphasizes future-ready outcomes that extend beyond language proficiency, including communicative competence, digital literacy, ethical prompt literacy, critical thinking, creativity, adaptability, intercultural competence, ethical awareness, and lifelong learning. The paper concludes that future-ready pedagogy should prepare learners to engage with AI critically, responsibly, and with full human agency.

**Keywords:** AI ethics, artificial intelligence, critical digital pedagogy, digital literacy, digital pedagogy, English language teaching, future-ready pedagogy.

**1. INTRODUCTION**

Artificial intelligence (AI) is changing education very quickly. In recent years, tools such as ChatGPT, Gemini, and other generative AI systems have started to influence how teachers teach and how students learn. These tools can generate texts, answer questions, provide feedback, and support communication in different ways. In English language teaching (ELT), AI has created new opportunities for speaking practice, writing support, vocabulary development, and personalized learning experiences (Chen et al., 2022; Du & Daniel, 2024; Lo et al., 2024). The growing role of AI is also changing what it means to learn English in today's world. English is no longer used only in traditional classrooms or printed materials. Learners now communicate through digital platforms, social media, virtual learning spaces, and AI-supported environments. Because of this shift, students need more than

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grammar knowledge and vocabulary. They also need digital literacy, critical thinking, creativity, adaptability, and intercultural communication skills to function successfully in modern societies (Choo et al., 2024).

The idea of “future-ready” education has therefore become increasingly important. Future-ready pedagogy focuses on preparing learners for uncertain and technology-rich futures. It encourages active learning, collaboration, flexibility, and ethical awareness rather than memorization and passive learning (Kaempfer, 2022; Nair, 2024). In language education, this means creating learning environments where students can use English meaningfully while also developing broader life and professional skills.

Generation Z and Generation Alpha learners especially require this kind of educational approach. These learners are growing up in highly digital environments shaped by smartphones, social media, online communication, and artificial intelligence. They are surrounded by technology in their daily lives, and this reality strongly influences how they learn, communicate, and interact with information (Ambu-Saidi & Al Tobi, 2025). Although learners within these generations are not identical, they often share similar experiences with digital technologies and online learning spaces.

Many students from these generations prefer learning experiences that are interactive, visually engaging, and connected to real-life situations. They are generally familiar with short-form multimedia content, instant access to information, and digital communication platforms. Because of this, traditional teacher-centered instruction may not always meet their expectations or learning preferences. Learners today often want greater participation, flexibility, creativity, and collaboration in the classroom (Kaempfer, 2022). They are also more familiar with digital technologies than previous generations, although familiarity with technology does not always mean critical understanding of it (Ambu-Saidi & Al Tobi, 2025; Schlam Salman & Inbar-Lourie, 2023). Researchers have therefore argued that teachers should redesign learning environments to address these changing learner needs. Future-ready classrooms often include flipped learning, blended learning, project-based learning, inquiry-based learning, and AI-supported activities (Priya & Shamugapriya, 2025). These approaches encourage students to become active participants in learning rather than passive receivers of information.

However, being comfortable with technology does not necessarily mean that learners can use it critically or responsibly. Many students can quickly search for information online, but they may struggle to evaluate the reliability of sources, recognize misinformation, or identify bias in AI-generated content. Generative AI systems can produce convincing responses even when the information is inaccurate or incomplete. As a result, students need support in developing critical digital literacy and ethical awareness (Ofosu-Asare, 2026).

Another important feature of these generations is the need for adaptability. Students are preparing for a future shaped by rapid technological change, global communication, and evolving workplace demands. Education, therefore, needs to help learners build transferable skills such as critical thinking, creativity, collaboration, communication, and lifelong learning (Choo et al., 2024). These competencies are becoming as important as traditional academic knowledge.

Generation Z and Alpha learners also face ethical challenges that earlier generations experienced less directly. AI systems, recommendation algorithms, and digital platforms continuously influence what learners read, watch, and think about. These systems also collect personal data and shape online behavior in ways that many students may not fully understand. Without proper guidance, learners may become overly dependent on technology or accept AI-generated information without questioning it (Verboom et al., 2025).

At the same time, the rapid growth of AI in education has created serious concerns. Generative AI systems may produce inaccurate information, biased content, or culturally limited perspectives. Questions about academic integrity, overreliance on technology, student privacy, data security, and unequal access to digital resources are becoming increasingly important in schools and universities (Ofosu-Asare, 2026). Another important issue is human agency. While AI can support learning, there is concern that excessive dependence on AI may weaken students’ independent thinking, creativity, and problem-solving abilities. Teachers, therefore, need to use AI carefully and critically. Technology should support human learning rather than replace human judgment and interaction (Isaee & Barjesteh, 2026b).

In ELT contexts, AI tools can provide valuable support for speaking, writing, and communication practice. Studies have shown that AI-supported language learning can improve learner engagement and confidence when used meaningfully (Du & Daniel, 2024; Wang, 2024). Teachers and learners have also reported positive attitudes toward AI-supported pedagogical tools, especially when these tools are integrated thoughtfully into classroom activities (Isaee & Barjesteh, 2026a; Slamet, 2024). However, researchers also emphasize the importance of ethical guidance, teacher preparation, and responsible implementation (Risdianto et al., 2025; van den Berg, 2025). Teachers also need to rethink their professional roles in these changing environments. Rather than serving only as providers of information, teachers increasingly act as facilitators, mentors, and ethical guides who help learners use technology thoughtfully and responsibly. Recent studies emphasize that language teachers need continuous professional development to respond effectively to AI-supported education and future-ready

learning environments (Barjesteh et al., 2026). Because of these opportunities and challenges, future-ready pedagogy should not focus only on technological innovation. It should also focus on ethics, human-centered learning, and responsible use of AI. Educational technology should help learners become thoughtful, creative, collaborative, and socially responsible individuals rather than simply efficient users of digital systems (Ofosu-Asare, 2026). In ELT, these learner characteristics have important implications. Students benefit from learning environments that encourage communication, collaboration, autonomy, and meaningful use of technology. Many learners become more motivated when they can create digital projects, discuss authentic issues, and use English in practical contexts. At the same time, teachers need to guide students in evaluating AI-generated content, verifying information, and maintaining their own voice and originality in language production (Isaee & Barjesteh, 2026a).

Although many recent studies discuss AI tools and digital learning, fewer studies connect future-ready pedagogy with ethical AI integration in ELT. Existing research often examines specific technologies without offering a broader conceptual framework that combines pedagogy, ethics, and future-ready competencies. This creates a need for a more comprehensive and integrated perspective. This paper responds to that need by proposing an ethical and AI-responsive framework for future-ready pedagogy in ELT. The framework brings together insights from AI-supported education, digital pedagogy, learner-centered teaching, future-ready learning, and ethical AI research within a unified conceptual model. It argues that effective language education in the AI era should balance technological innovation with human values such as fairness, transparency, inclusion, critical awareness, and learner autonomy.

The novelty of the present study lies in its integration of future-ready pedagogy and ethical AI governance within a single ELT-oriented conceptual framework. Unlike previous studies that examine AI integration or future-ready learning separately, this paper brings these perspectives together while emphasizing the ethical dimensions of AI-mediated language education. In addition, the study introduces the concept of ethical prompt literacy, referring to learners' ability to design prompts responsibly, evaluate AI-generated outputs critically, and interact with AI systems in transparent and ethically informed ways. The present paper therefore contributes to the literature by connecting pedagogy, AI integration, future-ready competencies, and ethical governance in a coherent model for ELT. In addition, it extends discussions of digital literacy through the concept of ethical prompt literacy as a necessary competency in AI-mediated learning environments. The study also provides theoretical guidance for researchers, teachers, curriculum developers, and teacher educators working in AI-mediated educational environments. Because this study is conceptual in nature, it does not aim to test hypotheses empirically. Instead, the paper synthesizes scholarship from AI in education, future-ready pedagogy, digital literacy, learner autonomy, intercultural communication, and ethical AI research in order to develop an integrated theoretical framework for ELT. The purpose of the study is, therefore, explanatory and conceptual rather than predictive.

The paper is organized into several sections. First, it explains the concept of future-ready pedagogy in ELT and examines the role of AI and digital technologies in language learning. After that, the paper explores ethical concerns related to AI integration and reviews teaching approaches that support ethical future-ready learning. Finally, it presents a conceptual framework and discusses practical implications, implementation challenges, and recommendations for future research.

## **2. CONCEPTUALIZING FUTURE-READY PEDAGOGY IN ELT**

Future-ready pedagogy refers to educational approaches that prepare learners for rapidly changing social, technological, and professional realities (Choo et al., 2024). In ELT, this approach goes beyond teaching grammar and vocabulary alone. It aims to help learners develop communication skills together with digital literacy, critical thinking, creativity, collaboration, adaptability, and ethical awareness (Zhang, 2024). Future-ready pedagogy is not a single teaching method. Instead, it is a broad educational perspective that combines learner-centered teaching, meaningful technology integration, and competency-based learning. This approach encourages students to participate actively in learning rather than passively receiving information. It also emphasizes real-world communication, problem solving, reflection, and collaboration (Kaempfer, 2022; Nair, 2024).

Several important ideas shape future-ready pedagogy. First, learning should be learner-centered. Students should have opportunities to make decisions, explore ideas, solve problems, and participate actively in classroom activities. Teachers create learning environments where students can communicate, collaborate, and reflect on their own learning processes (Schlam Salman & Inbar-Lourie, 2023). Second, future-ready pedagogy encourages purposeful use of technology. Digital tools and AI systems should support learning rather than replace human interaction or teacher guidance. Technologies can help learners access authentic materials, receive feedback, and participate in creative tasks, but human judgment and communication remain central to education (Lo et al., 2024). Third, this approach focuses on competencies that learners need beyond the classroom. Educational

success is no longer measured only by memorization or grammatical accuracy. Learners also need to communicate effectively, think critically, solve problems, work collaboratively, and continue learning throughout their lives (Ambu-Saidi & Al Tobi, 2025). Future-ready pedagogy also values adaptability and flexibility. Learning environments should respond to different learner needs, technological changes, and social realities. Teachers may use blended learning, flipped learning, project-based learning, inquiry-based learning, and AI-supported activities to create more engaging and flexible educational experiences (Priya & Shamugapriya, 2025).

In ELT classrooms, this approach encourages learners to use English in meaningful and authentic ways. Students may analyze multimedia content, participate in digital discussions, create collaborative projects, and interact with AI-supported tools. These activities help learners improve their language skills while also developing digital competence and critical awareness (Manoocherzadeh et al., 2025; Moundridou et al., 2024).

Another important aspect of future-ready pedagogy is ethics. As AI becomes more common in education, learners need to understand issues such as bias, privacy, transparency, and responsible technology use. Ethical awareness should therefore become part of classroom learning rather than being treated as a separate topic (Nguyen et al., 2025; Ofosu-Asare, 2026). This educational perspective also changes the role of teachers. Teachers are no longer viewed simply as sources of knowledge. Instead, they guide discussions, support collaboration, design meaningful tasks, and help students think critically about technology and information. Teacher readiness and professional development are therefore essential for successful future-ready education (Petko et al., 2018). One major strength of future-ready pedagogy is its integrative nature. It connects technology, communication, ethics, and learner-centered teaching within a single framework. Instead of using digital tools only for convenience, teachers can design learning experiences that are meaningful, engaging, and socially responsible.

An important feature of future-ready pedagogy is the interconnected relationship between learner autonomy, ethical awareness, and AI-supported learning. As students increasingly interact with generative AI systems, autonomous learning can no longer be understood simply as independent study or self-access learning. Learners must also develop the ability to evaluate AI-generated information critically, question automated suggestions, and make responsible decisions about how technology is used during the learning process. In this sense, ethical prompt literacy becomes closely connected to learner autonomy because students are expected not only to use AI tools effectively, but also to interact with them thoughtfully, critically, and responsibly. Similarly, intercultural competence and critical digital literacy become increasingly interconnected in AI-mediated communication, since many digital systems reflect dominant cultural and linguistic perspectives that learners must learn to recognize and evaluate critically.

Overall, future-ready pedagogy provides an important foundation for ELT in the age of AI. It recognizes that effective language education should prepare learners not only for academic success, but also for responsible participation in a digital and globally connected world. The next section discusses how AI and digital technologies can support this vision in ELT classrooms.

### **3. ARTIFICIAL INTELLIGENCE AND DIGITAL TECHNOLOGIES IN FUTURE-READY ELT**

Artificial intelligence and digital technologies are changing many aspects of ELT. Today, learners can use AI systems to practice speaking, improve writing, receive feedback, generate ideas, and access information instantly. These technologies are creating more flexible, interactive, and personalized learning experiences for students and teachers (Chen et al., 2022; Lo et al., 2024).

Generative AI tools such as ChatGPT, Gemini, and Copilot can support different language learning activities. Students may use these systems for brainstorming, vocabulary practice, grammar support, speaking simulations, and writing revision. Teachers can also use AI to design classroom materials, create discussion questions, prepare lesson plans, and provide feedback more efficiently (Kiryakova & Angelova, 2023; Slamet, 2024). Digital technologies also encourage more collaborative and multimodal learning. Platforms such as Canva, Padlet, and online discussion spaces allow students to work together, create digital projects, and communicate using different forms of media. These activities often make learning more engaging and meaningful for learners who are already familiar with digital environments (Mayer, 2005; Moundridou et al., 2024).

One important advantage of AI-supported learning is personalization. Learners can practice at their own pace and receive support based on their language level, interests, and learning needs. This flexibility can increase confidence and encourage greater learner autonomy. AI tools may also create low-pressure learning environments where students feel more comfortable experimenting with language and making mistakes during practice (Du & Daniel, 2024; Wang, 2024). AI can also strengthen authentic language use in ELT classrooms. Students can use English to create prompts, analyze AI-generated responses, compare information, and produce digital content for real audiences. These activities support language development while also encouraging creativity, critical engagement, and digital literacy (Isaee & Barjesteh, 2026a). At the same time, personalized AI-

supported learning should not be confused with passive dependence on automated systems. Future-ready pedagogy emphasizes that learner autonomy involves active decision making, reflection, and critical engagement rather than simple reliance on AI-generated assistance. Students need opportunities to compare AI responses, refine generated content thoughtfully, and reflect on how technological systems shape communication and meaning. This connection between autonomy, critical digital literacy, and ethical prompt literacy is especially important in language education because learners are not only developing linguistic skills, but also learning how to participate responsibly in digitally mediated intercultural environments.

Despite these benefits, the use of AI in education also creates several concerns. AI-generated information may contain errors, bias, or culturally limited perspectives. Students may trust AI responses too easily without checking accuracy or reliability. Some learners may also become overly dependent on automated support and reduce their own effort in thinking, planning, and revising (Risdianto et al., 2025).

Privacy and ethical concerns are also becoming more important in AI-supported education. Many AI systems collect user data, store interactions, and provide limited transparency about how information is processed. Questions related to academic integrity, authorship, and responsible AI use are therefore receiving growing attention in educational research (Ofosu-Asare, 2026). Another important concern involves the growing commercialization of educational AI. Many generative AI systems are developed and controlled by large technology companies whose priorities may not always align with educational values. As a result, schools and learners may become increasingly dependent on corporate platforms that shape access to information, communication practices, and learning behaviors (Wang, 2024). In some cases, AI systems may also encourage standardized forms of expression that reduce linguistic diversity and limit opportunities for creative or culturally situated communication. From a critical digital pedagogy perspective, teachers therefore need to examine not only how AI supports learning, but also how technological systems influence power, participation, and representation in educational environments. Another challenge involves unequal access to technology. Not all learners have the same access to devices, internet connections, or paid AI services. This digital inequality may create differences in educational opportunities and learning outcomes. Future-ready education, therefore, needs to consider inclusion, accessibility, and fairness when integrating technology into classrooms (Petko et al., 2018). These challenges show that AI should not be treated as a replacement for teachers or human interaction. Teachers continue to play a central role in guiding learning processes, facilitating discussion, interpreting information, and supporting responsible digital participation. Human interpretation remains essential in language education, particularly when learners are developing reflective and responsible communication practices (van den Berg, 2025; Verboom et al., 2025). From a future-ready perspective, the most important issue is not simply whether AI should be used in education, but how it should be used. Technology becomes valuable when it supports meaningful learning, encourages reflection, and helps students develop both language skills and ethical awareness. When used thoughtfully, AI and digital tools can contribute to more engaging, flexible, and learner-centered English language classrooms.

The next section discusses the ethical foundations that should guide the use of AI and digital technologies in future-ready ELT.

#### **4. PEDAGOGICAL APPROACHES THAT OPERATIONALIZE FUTURE-READY PEDAGOGY**

The growing use of artificial intelligence in education has created many opportunities for innovation, but it has also raised important ethical concerns. Decisions about how AI tools are selected, used, and evaluated influence fairness, privacy, participation, and learner autonomy. For this reason, future-ready pedagogy should not focus only on technological efficiency or convenience. It should also be guided by ethical principles that protect human values and support responsible educational practices (Ofosu-Asare, 2026). In ELT, ethical concerns become especially important because AI systems directly influence communication, language production, access to information, and cultural representation. Teachers and learners increasingly interact with systems that generate texts, evaluate responses, collect data, and shape learning experiences. As a result, educators need to think carefully about the social and ethical effects of these technologies. Ethical future-ready pedagogy, therefore, encourages teachers to use AI critically rather than uncritically accepting every technological innovation. It promotes transparency, fairness, accountability, inclusion, and human agency in digital learning environments. The following sections explain some of the most important ethical concerns related to AI-supported education.

##### **4.1. Algorithmic Bias and Cultural Representation**

AI systems are trained on massive amounts of online data. These datasets may include stereotypes, cultural bias, misinformation, and unequal representation of different languages and communities. Because of this, AI-generated responses may sometimes reflect dominant cultural perspectives while ignoring or oversimplifying less visible voices and traditions (Holmes & Miao, 2023).

In ELT classrooms, this issue is especially important because English-language AI systems often rely heavily on Western-centered information and examples. Students may therefore encounter limited cultural perspectives or simplified representations of social issues. If teachers do not address these limitations, learners may begin to view AI-generated information as completely objective or universally correct (Isaee & Barjesteh, 2026a). Teachers can reduce this problem by encouraging students to compare multiple sources, question assumptions, and discuss how AI systems are trained. However, these approaches should be implemented through clear and practical classroom activities rather than only through general discussions (Verboom et al., 2025). For example, teachers can ask students to generate responses from AI tools about the same topic and then compare those responses with information taken from academic articles, local media sources, or culturally diverse materials. Through this process, students can identify whose perspectives are represented, which viewpoints are missing, and how certain cultures or communities may be portrayed differently. Teachers can also design critical evaluation activities in which students examine AI-generated texts for stereotypes, cultural assumptions, or biased language. In speaking or writing classes, learners may analyze how AI systems describe different countries, religions, genders, or social groups and discuss whether those descriptions are balanced or oversimplified (Wang, 2024). Such activities help students recognize that AI systems are not neutral technologies but products of human-designed datasets and algorithms. Another practical strategy involves multilingual and intercultural comparison tasks. Students from different linguistic or cultural backgrounds can enter similar prompts into AI systems using different languages and compare the outputs they receive (Isaee, 2026a). For instance, learners may explore whether AI-generated descriptions of cultural traditions, educational systems, or social values differ depending on the language of the prompt. These activities can increase awareness of linguistic inequality, representation gaps, and cultural dominance within AI systems while also encouraging intercultural dialogue in the classroom.

Project-based learning can further support critical engagement with algorithmic bias (Manoochehrzadeh et al., 2025). Teachers may ask learners to investigate how AI tools represent specific regions, identities, or global issues and present their findings through presentations, debates, reflective journals, or collaborative reports. In this way, students move beyond passive consumption of AI-generated information and become active evaluators of digital content (Du & Daniel, 2024). Reflection activities can also encourage learners to consider how their own assumptions influence the prompts they write and the interpretations they make. In addition, teachers need to provide explicit instruction about how AI systems are trained. Explaining concepts such as datasets, algorithms, machine learning, and data selection in simplified and accessible ways can help learners understand why bias appears in AI-generated outputs. When students understand that AI systems learn from existing online content, they become more aware that misinformation, stereotypes, and unequal representation can also be reproduced through AI-generated responses (Wang, 2024). Ethical future-ready pedagogy should therefore promote cultural awareness, multilingual perspectives, critical digital literacy, and respect for diverse forms of knowledge. Rather than treating AI as an unquestionable authority, teachers should guide learners to engage with AI critically, ethically, and reflectively. Such practices can help students become more responsible users of technology while also developing intercultural awareness and independent thinking skills that are essential for future-ready learning environments (Choo et al., 2024).

#### **4.2. Student Data Privacy and Educational Surveillance**

Many AI-powered platforms collect large amounts of user data. This may include prompts, assignments, uploaded files, search histories, and patterns of learner behavior. Some educational systems also monitor student performance, participation, and online activity. Although these tools may improve personalization and feedback, they also raise concerns about privacy and educational surveillance (McDonald et al., 2025). Many learners may not fully understand what information is being collected or how it may later be used (Isaee, 2026b). Questions about consent, data security, and ownership, therefore, become increasingly important in AI-supported education. In some cases, personal information may even be shared with third-party organizations without students fully realizing it.

Ethical pedagogy requires teachers and institutions to select technologies carefully and communicate openly about data use. However, responsible AI implementation should move beyond general policy statements and include clear classroom practices and institutional procedures. Schools and universities, for example, can provide students with detailed explanations about what kinds of data AI systems collect, how long the information is stored, who has access to it, and whether the data may be shared with external companies or used for system training purposes (Isaee, 2026a). Providing this information in simple and accessible language is important because many learners may not read or fully understand complex digital privacy agreements.

Institutions can also establish practical guidelines for safe AI use in educational settings. Teachers may instruct students not to upload sensitive personal information, examination materials, financial information, or

confidential institutional documents into public AI platforms. In language classrooms, students can be encouraged to use fictional names, anonymized examples, or sample data when practicing AI-assisted writing and communication tasks (Risdianto et al., 2025). Such precautions can help reduce unnecessary exposure of personal information.

Another important practical step involves teaching students how digital footprints are created and maintained. Many learners are unaware that prompts entered into AI systems may remain stored and potentially accessible for future analysis. Teachers can therefore organize classroom discussions or workshops that explain how online activity, browsing behavior, and AI interactions may contribute to long-term digital records (Choo et al., 2024). Demonstrating real-world examples of data misuse, identity theft, or unauthorized information sharing can make these risks more understandable and relevant for students.

Teachers can also integrate digital safety training into classroom activities (Barjesteh et al., 2026). For example, learners may analyze privacy policies of different AI platforms and compare how companies explain data collection and user rights. Students can work in groups to identify which platforms provide stronger privacy protections and discuss what ethical responsibilities educational institutions should have when selecting digital technologies. Such activities encourage learners to become more informed and critical users of AI systems rather than passive consumers of educational technology.

In addition, institutions should provide professional development programs that help teachers understand ethical AI use, data protection responsibilities, and safe technology integration (Barjesteh et al., 2026). Many teachers may use AI tools without fully understanding how student data are processed or stored. Training programs can therefore help educators make more informed decisions when selecting AI-supported platforms and designing technology-mediated learning activities. Schools and universities should also establish transparent policies regarding consent and responsible monitoring practices. Students should clearly understand whether their online activities, participation patterns, or AI interactions are being tracked and for what purposes such monitoring is conducted. Ethical educational environments should avoid excessive surveillance practices that may reduce student trust, autonomy, or psychological comfort in learning spaces (Barjesteh et al., 2026).

Teachers should additionally encourage responsible online behavior by discussing password security, safe account management, misinformation risks, and ethical communication practices in digital environments. Students need guidance not only in using AI effectively but also in understanding the ethical responsibilities associated with technology use. Ethical future-ready pedagogy should therefore aim to protect learner privacy, promote transparency, and support the development of digitally responsible individuals who can participate safely and critically in AI-mediated educational environments (Ofosu-Asare, 2026).

#### **4.3. AI Dependency and Cognitive Outsourcing**

Generative AI tools can help learners complete tasks more quickly by offering suggestions, explanations, summaries, and corrections. While these features can support learning, overreliance on AI may weaken independent thinking and problem-solving abilities. Students may begin depending on AI systems for tasks that require personal reflection, analysis, and creativity. This issue is sometimes described as cognitive outsourcing because learners transfer important mental processes to technology instead of developing those skills themselves. Students who rely too heavily on AI-generated answers may spend less time planning, organizing ideas, evaluating evidence, or revising their work critically (Risdianto et al., 2025). Future-ready pedagogy should therefore use AI as a support tool rather than a replacement for thinking. Teachers can design tasks that encourage students to evaluate AI responses, compare outputs, revise generated texts, and explain their reasoning. These activities help learners remain active participants in the learning process rather than passive consumers of automated content.

#### **4.4. Human Agency and Teacher Judgment**

One of the most important ethical principles in AI-supported education is the protection of human agency. Students should maintain ownership of their ideas, decisions, and creative work. Teachers should also continue using professional judgment when designing lessons, selecting materials, and evaluating learning outcomes (Barjesteh et al., 2026). AI systems can generate useful suggestions, but they should not determine educational goals or replace human relationships in the classroom. Learning is not simply the transfer of information. It also involves communication, empathy, reflection, identity development, and social interaction. These human dimensions of education cannot be fully automated. Teachers, therefore, play a critical role as facilitators, mentors, and ethical guides. They help students interpret information, question assumptions, and use technology responsibly. Human judgment remains essential in maintaining fairness, contextual understanding, and meaningful communication in ELT classrooms (van den Berg, 2025).

#### **4.5. Transparency and Explainability**

AI systems often produce highly confident responses without clearly explaining how those responses were created. This lack of transparency may cause learners to trust AI-generated information too easily. Students may assume that the system is objective or always correct simply because the response sounds fluent and convincing. In reality, AI systems generate responses based on patterns in training data rather than genuine understanding. They can produce inaccurate, misleading, or fabricated information. Learners, therefore, need to understand the limitations of AI technologies and recognize that AI outputs should always be evaluated critically (Holmes & Miao, 2023). Teachers can support transparency by modeling fact-checking strategies, discussing how AI systems function, and encouraging students to verify information using reliable sources. Ethical future-ready pedagogy should help learners become reflective and informed users of AI rather than unquestioning users of automated systems.

#### **4.6. AI Colonialism and Linguistic Dominance**

Most leading AI systems are developed by a relatively small number of technology companies and are trained largely on data from dominant languages and cultures. This concentration of technological and economic power may reinforce existing inequalities while privileging particular cultural perspectives and communication norms. In language education, the strong influence of English-language data may overshadow local knowledge, minority languages, and culturally specific forms of expression. Learners may therefore encounter AI-generated content that reflects dominant global perspectives more frequently than local or marginalized voices. In addition, dependence on commercially developed AI systems may increase institutional reliance on corporate technologies that operate according to market interests rather than educational priorities. Ethical future-ready pedagogy should therefore promote multilingualism, contextual relevance, cultural diversity, and critical awareness of how technological systems shape language, identity, and representation (Verboom et al., 2025). In language education, this issue is particularly important because English-language content dominates many digital spaces. Learners may therefore encounter perspectives that privilege certain cultural values while marginalizing others. Over time, this imbalance may weaken linguistic diversity and local identities. Future-ready pedagogy should respond to this issue by encouraging multilingualism, cultural diversity, and context-sensitive teaching. Teachers can include local examples, regional perspectives, and culturally relevant materials alongside global digital resources. This helps learners value both global communication and local identity (Ambu-Saidi & Al Tobi, 2025; Zhang, 2024).

#### **4.7. Equity and Digital Injustice**

Access to technology is not equal across all educational contexts. Some students have high-speed internet, personal devices, and access to paid AI services, while others have very limited digital resources. These differences may create unequal learning opportunities and widen existing educational gaps (Petko et al., 2018). Future-ready pedagogy should therefore prioritize accessibility and inclusion. Educational innovation should not benefit only learners with strong technological resources. Teachers and institutions need to design flexible learning environments that support students from different social and economic backgrounds. Equity also involves accessibility for learners with disabilities and different learning needs. Ethical educational design should consider affordability, usability, language accessibility, and inclusive participation when selecting digital tools (Listopadzka et al., 2025).

#### **4.8. Ecological Costs of AI Systems**

AI technologies also have environmental consequences that are often ignored in educational discussions. Large-scale AI systems require substantial amounts of electricity, computing power, and water resources. The rapid expansion of digital infrastructures therefore contributes to environmental concerns related to energy consumption and sustainability. Although learners may not directly see these environmental effects, educators should still encourage thoughtful and responsible use of technology. Future-ready education should promote meaningful use of AI rather than unnecessary dependence on resource-intensive systems (Listopadzka et al., 2025). Discussions about sustainability can also help students understand that technological innovation always has social and environmental consequences. Ethical awareness should therefore include not only digital responsibility but also environmental responsibility.

#### **4.9. Ethical Prompt Literacy**

Using generative AI effectively requires more than technical ability or familiarity with digital tools. Learners also need to understand how AI systems influence communication, information, creativity, and decision-making. This broader ability can be described as ethical prompt literacy. Ethical prompt literacy refers to the ability to design

prompts responsibly, interpret AI-generated responses critically, recognize bias and limitations, and use AI systems in transparent and ethically informed ways.

Ethical prompt literacy is closely related to digital literacy, but the two concepts are not identical. Digital literacy generally focuses on accessing, evaluating, and creating information through digital technologies. Ethical prompt literacy specifically focuses on human interaction with generative AI systems and the ethical decisions involved in that interaction. Learners therefore need not only to generate useful responses, but also to question how outputs are produced, whose perspectives are represented, and how AI may shape communication and understanding.

In ELT contexts, ethical prompt literacy may include asking AI systems for multiple perspectives on cultural topics, evaluating the accuracy of generated language examples, identifying stereotypical or biased responses, and revising prompts to produce clearer and more responsible outputs. Students should also learn when AI assistance is appropriate, how AI support should be acknowledged, and how to maintain ownership of their own ideas and language production. Since the quality of AI-generated responses often depends on the quality of prompts, learners need opportunities to practice designing prompts carefully and thoughtfully (Nguyen et al., 2025). Teachers can support the development of ethical prompt literacy by designing activities in which learners compare prompts, revise AI-generated content, verify information, discuss ethical concerns, and reflect on the social implications of AI use. Assessment can also move beyond technical performance and include learners' ability to explain prompt choices, evaluate generated information critically, and justify responsible use of AI-supported content. As generative AI becomes more common in education, ethical prompt literacy is likely to become an essential component of future-ready language learning because students need not only the ability to use AI effectively but also the judgment required to engage with it responsibly.

Taken together, these ethical concerns show that AI literacy in education cannot be limited to technical competence alone. Learners also need critical awareness of how AI systems shape communication, representation, knowledge production, and social interaction. Ethical prompt literacy, therefore, becomes an important bridge between critical digital pedagogy and learner autonomy because it encourages students to interact with AI systems actively rather than accepting generated outputs uncritically. In ELT contexts, this critical engagement is particularly important since language learning is closely connected to identity, culture, voice, and intercultural understanding. Overall, these ethical concerns show that future-ready pedagogy is not simply about introducing new technologies into classrooms. It is about creating learning environments where innovation is guided by human values, ethical reflection, and social responsibility. By emphasizing fairness, transparency, privacy, sustainability, and human agency, teachers can use AI in ways that support both language learning and ethical development.

## **5. PEDAGOGICAL APPROACHES THAT OPERATIONALIZE ETHICAL FUTURE-READY PEDAGOGY**

Ethical future-ready pedagogy becomes meaningful when it is translated into classroom practice. Teachers need instructional approaches that combine communication, collaboration, critical thinking, and responsible use of technology. These approaches help learners engage actively with English while also developing digital competence, creativity, and ethical awareness (Nair, 2024). Although different teaching approaches have unique features, they share several important principles. Most encourage learner participation, real-world communication, reflection, inquiry, and meaningful technology integration. They also move away from traditional teacher-centered instruction toward more flexible and student-centered learning environments. The following sections explain several important approaches that support ethical future-ready pedagogy in ELT contexts.

### **5.1. Flipped Classroom**

The flipped classroom model changes the traditional structure of teaching and learning. Instead of receiving explanations mainly during class time, students first explore materials independently before class. They may watch videos, read digital content, interact with AI-generated explanations, or complete short online tasks at home. Classroom time is then used for discussion, collaboration, speaking activities, and problem-solving (Lalithakumari & Vijayarani, 2024). This approach gives learners more flexibility because they can review materials at their own pace. Students who need additional time can revisit explanations, while more advanced learners can move more quickly through basic content. As a result, classroom sessions become more interactive and learner-centered. In ELT contexts, flipped learning can increase opportunities for communication practice. Instead of spending most class time explaining grammar rules, teachers can focus on debates, presentations, collaborative writing, peer feedback, and authentic language use. AI tools may also support pre-class preparation by generating summaries, vocabulary explanations, or practice questions. However, successful implementation requires careful planning. Teachers need to ensure that students have access to materials and understand their

responsibilities before class. Ethical considerations are also important because some learners may depend too heavily on AI-generated summaries instead of engaging critically with the content.

### **5.2. Project-Based Learning**

Project-Based Learning (PBL) focuses on extended tasks that require students to investigate problems, collaborate with peers, and create meaningful final products. Instead of memorizing isolated information, learners use language actively to complete authentic projects such as podcasts, videos, reports, presentations, digital stories, or social campaigns (Manoocherzadeh et al., 2025). PBL supports many future-ready competencies at the same time. Students practice communication, creativity, teamwork, research skills, and problem solving while using English in realistic situations. Projects also encourage learner autonomy because students make decisions about topics, resources, and presentation formats. AI can support project-based learning in several ways. Learners may use AI tools for brainstorming, organizing ideas, checking language accuracy, or exploring different perspectives. Teachers can also use AI to scaffold projects and provide formative feedback. At the same time, ethical guidance remains essential. Students need to evaluate AI-generated information critically, avoid plagiarism, and maintain ownership of their final work. Teachers should therefore emphasize originality, reflection, and responsible AI use throughout project development.

### **5.3. Inquiry-Based Learning**

Inquiry-based learning begins with questions, problems, or real-world issues rather than direct explanations from teachers. Students investigate topics, gather information, analyze evidence, and construct their own understanding through exploration and discussion. In ELT classrooms, inquiry-based learning allows students to use English as a tool for research and communication. Learners may investigate environmental problems, cultural topics, social issues, or technological developments while practicing reading, writing, speaking, and collaboration skills. This approach strengthens curiosity, critical thinking, and learner independence. Instead of simply memorizing information, students learn how to ask meaningful questions, compare viewpoints, and justify their conclusions. AI tools can support inquiry-based learning by suggesting resources, generating questions, or helping students organize ideas. However, students must also learn to verify information and recognize the limitations of AI-generated responses. Teachers, therefore play an important role in guiding critical evaluation and reflective thinking (Moundridou et al., 2024).

### **5.4. Blended Learning**

Blended learning combines face-to-face instruction with online learning experiences. Students participate in classroom activities while also using digital platforms for assignments, discussions, collaboration, and independent practice. One major advantage of blended learning is flexibility. Learners can continue practicing English outside of classroom hours and access materials whenever needed. Online spaces also create opportunities for personalized learning and ongoing communication between teachers and students. In ELT, blended learning may include online discussions, digital portfolios, collaborative writing platforms, AI-supported feedback systems, and multimedia learning tasks. These experiences help students develop both language proficiency and digital literacy. However, blended learning also requires careful instructional design. Teachers need to ensure that online activities remain meaningful and accessible. Unequal access to technology and internet connectivity may create challenges for some learners, making inclusion and flexibility especially important (Petko et al., 2018).

### **5.5. AI-Supported Learning**

AI-supported learning involves the purposeful integration of AI technologies into teaching and learning processes. Students may use AI for speaking practice, writing feedback, vocabulary development, brainstorming, or language revision. Teachers may also use AI to generate lesson materials, design activities, and support assessment (Lo et al., 2024). One important advantage of AI-supported learning is immediate feedback. Students can receive suggestions quickly and practice language skills repeatedly in low-pressure environments. This may increase learner confidence and encourage independent learning (Du & Daniel, 2024). AI can also support differentiated instruction because learners receive assistance based on their needs and proficiency levels. Students who struggle with certain skills may receive additional practice and explanations tailored to their learning pace. Despite these advantages, AI-supported learning must remain ethically grounded. Teachers need to discuss authorship, academic integrity, privacy, and responsible AI use openly with learners. Students should understand that AI is a support tool rather than a replacement for critical thinking or personal creativity (Isaee & Barjesteh, 2026a).

### **5.6. Competency-Based Education**

Competency-Based Education (CBE) focuses on what learners are able to do rather than how much time they spend in class. Students progress by demonstrating mastery of specific competencies and skills. In future-ready ELT, competencies include communication, collaboration, critical thinking, digital literacy, intercultural awareness, and ethical technology use. Learners demonstrate these abilities through authentic tasks such as presentations, projects, portfolios, and collaborative activities. This approach supports learner autonomy because students can progress at different speeds depending on their strengths and needs. It also connects language learning more closely to real-world communication and professional contexts. AI tools may support competency-based learning by offering personalized practice and feedback. However, teachers still need to evaluate learner performance holistically and consider creativity, communication quality, and ethical awareness rather than relying only on automated evaluation systems.

### **5.7. Self-Regulated and Reflective Learning**

Self-regulated learning encourages students to take responsibility for their own learning processes. Learners set goals, monitor progress, reflect on strategies, and adjust their approaches when necessary. Reflection is especially important in AI-supported environments because students need to think critically about how they use technology and how it influences their learning. Reflection journals, learning portfolios, peer discussions, and self-assessment activities can strengthen awareness of both language development and ethical decision-making. AI tools may also support reflection by providing feedback, generating practice tasks, or helping students identify weaknesses. However, students should still evaluate feedback critically and make independent decisions about revisions and learning strategies. This approach helps learners become more autonomous, adaptable, and aware of their strengths and challenges. These qualities are essential for lifelong learning in rapidly changing digital environments.

### **5.8. Intercultural and Authentic Learning**

Future-ready ELT should connect learners with authentic language use and diverse cultural perspectives. Students should engage with real-world materials such as podcasts, blogs, videos, interviews, online discussions, and social media content. Authentic learning experiences help students understand how English is used in different cultural and communicative contexts. Learners also develop intercultural competence by exploring diverse viewpoints and discussing global issues (Ambu-Saidi & Al Tobi, 2025). Technology and AI can further support intercultural communication by connecting learners across geographical boundaries. Students may collaborate with international peers, participate in virtual exchanges, or analyze global media content in English. At the same time, teachers should encourage learners to question stereotypes, recognize cultural diversity, and respect multilingual identities. Intercultural learning should therefore promote empathy, openness, and critical awareness rather than superficial cultural comparisons. Together, these pedagogical approaches show that future-ready pedagogy is not simply about using modern technologies. It is about designing meaningful learning experiences that combine communication, ethics, creativity, collaboration, and responsible technology use. These approaches help learners develop both language proficiency and the broader competencies needed for participation in a rapidly changing world. The next section presents an ethical and AI-responsive conceptual framework that brings these ideas together within a unified model for ELT.

## **6. AN ETHICAL AND AI-RESPONSIVE CONCEPTUAL FRAMEWORK FOR FUTURE-READY ELT**

The rapid expansion of artificial intelligence in education has created a need for frameworks that connect pedagogy, technology, and ethics in a balanced and meaningful way. Many educational discussions focus either on technological innovation or on isolated teaching strategies. However, effective future-ready ELT requires a more integrated perspective that explains how learning processes, instructional approaches, and ethical principles interact with one another. The framework proposed in this study responds to this need by presenting an ethical and AI-responsive model for future-ready ELT. The framework brings together learner-centered pedagogy, AI-supported instruction, ethical governance, and future-ready competencies within a single structure. Rather than viewing technology as an independent solution, the framework positions AI as a tool that supports human learning, communication, and critical engagement when used responsibly and purposefully. The model is designed to guide teachers, curriculum developers, teacher educators, and researchers who seek to integrate AI into ELT while preserving educational values such as fairness, autonomy, inclusion, and human agency. It also emphasizes that technology becomes educationally valuable only when it contributes to meaningful learning experiences and ethically grounded outcomes. The framework consists of three interconnected layers:

1. Pedagogical Inputs
2. Mediating Learning Processes
3. Future-Ready Outcomes

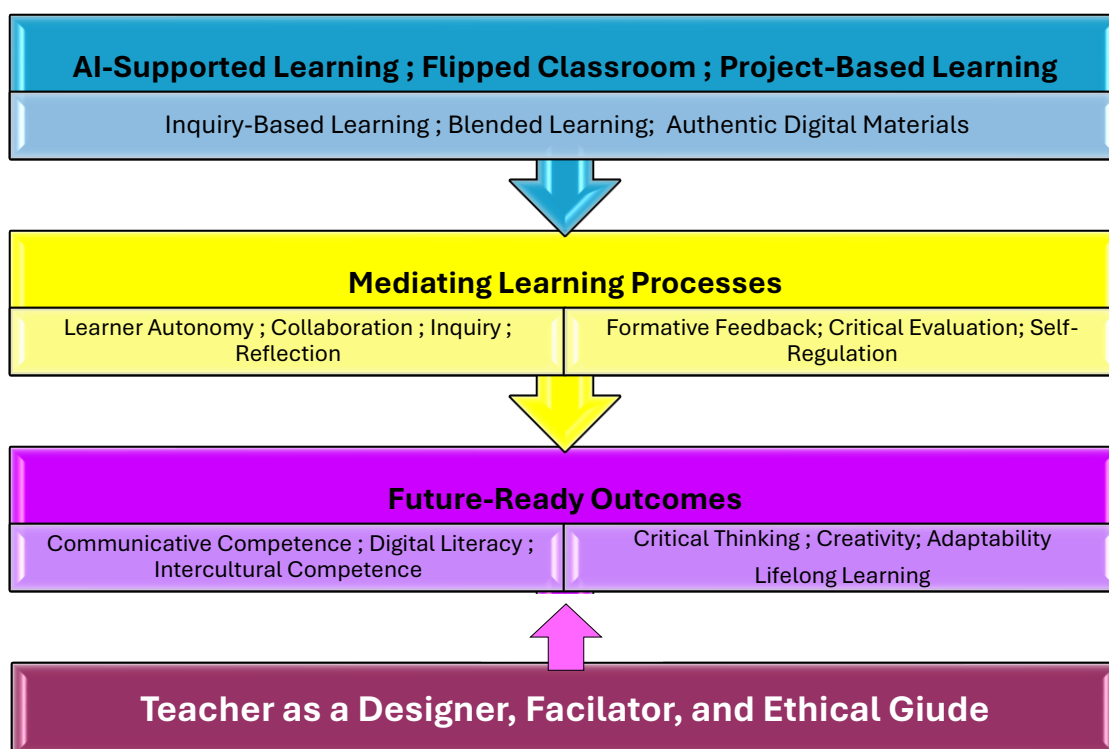
These three layers are surrounded and guided by ethical governance principles that influence every stage of teaching and learning. Before explaining the framework in detail, it is important to clarify the central concepts that guide the model both theoretically and practically. Theoretically, the framework draws upon perspectives from learner-centered language pedagogy, multimedia learning, future-ready education, digital literacy, and ethical AI scholarship (Lightbown & Spada, 2021; Mayer, 2005; Kaempf, 2022; Holmes & Miao, 2023; Choo et al., 2024; Zhang, 2024). These perspectives collectively emphasize active learning, communication, critical reflection, learner autonomy, ethical responsibility, and meaningful technology integration. The framework also reflects contemporary discussions of AI-mediated language learning and responsible digital engagement in educational environments (Nguyen et al., 2025; Liu & Zhao, 2025).

In this study, future-ready ELT is theoretically defined as an approach to language education that prepares learners for participation in technologically advanced, globally connected, and rapidly changing societies by integrating communication skills, digital literacy, critical thinking, creativity, adaptability, collaboration, and ethical awareness. Practically, future-ready ELT refers to classroom practices that engage learners in meaningful communication, inquiry-based tasks, collaborative projects, digital interaction, and reflective learning supported by both traditional and AI-mediated resources.

AI-responsive pedagogy is theoretically understood as a pedagogical orientation that critically and purposefully integrates artificial intelligence into teaching and learning processes while maintaining human agency, ethical responsibility, and learner-centered education. In practice, AI-responsive pedagogy involves the thoughtful use of AI tools such as chatbots, automated feedback systems, digital collaboration platforms, and AI-assisted language learning applications to support interaction, feedback, creativity, and personalized learning without replacing teacher guidance or human decision-making.

Ethical governance within the framework is theoretically defined as the set of principles and responsibilities that regulate how AI technologies are selected, implemented, evaluated, and monitored in educational environments (Holmes & Miao, 2023; Ofosu-Asare, 2026). These principles include fairness, transparency, accountability, privacy, inclusion, sustainability, and respect for human agency. From a practical perspective, ethical governance refers to concrete educational actions such as protecting student data, promoting responsible AI use, encouraging critical evaluation of AI-generated content, reducing algorithmic bias, ensuring equitable access to digital resources, and helping learners develop ethical awareness in technology-mediated environments.

Finally, future-ready competencies are theoretically conceptualized as the knowledge, skills, attitudes, and ethical dispositions learners require to function effectively in digital and intercultural societies. Practically, these competencies include communicative competence, digital literacy, ethical prompt literacy, critical thinking, creativity, collaboration, intercultural awareness, adaptability, self-regulation, and responsible participation in AI-supported learning environments. Together, these concepts form the theoretical and practical foundation of the proposed framework as shown in Figure 1.



**Figure 1.** Ethical and ai-responsive conceptual framework for future-ready ELT

Figure 1 illustrates that future-ready ELT is not based on technology alone, but on the interaction among pedagogy, learning processes, ethical governance, and educational outcomes. The framework emphasizes that AI-supported tools become educationally meaningful only when they are connected to reflective learning processes such as collaboration, inquiry, autonomy, and critical evaluation. The model also shows that ethical principles are not separate from pedagogy, but operate across all dimensions of teaching and learning. In this way, the framework highlights the importance of balancing innovation with human-centered educational values.

### 6.1. Pedagogical Inputs

The first layer of the framework includes the instructional approaches and learning conditions that shape classroom experiences. These pedagogical inputs create opportunities for learners to engage actively with language, technology, and authentic communication.

Several approaches form the foundation of this layer, including flipped learning, project-based learning, inquiry-based learning, blended learning, AI-supported instruction, competency-based learning, and intercultural learning activities. These approaches encourage active participation, collaboration, reflection, creativity, and meaningful communication rather than passive memorization (Choo et al., 2024; Nair, 2024). AI-supported tools are also part of this layer. Technologies such as ChatGPT, digital collaboration platforms, automated feedback systems, and multimedia learning tools can support brainstorming, language practice, communication, and personalized learning experiences (Lo et al., 2024). However, within this framework, technology is not treated as the center of learning. Instead, it functions as a support mechanism that enhances interaction, inquiry, and learner engagement. Authentic digital materials also play an important role. Learners interact with podcasts, videos, blogs, online discussions, social media content, and AI-generated materials that reflect real-world language use. These experiences help students connect classroom learning to contemporary communication practices and global issues. Importantly, pedagogical inputs are selected not only for efficiency or innovation but also for their ethical and educational value. Teachers, therefore, need to evaluate whether technologies and activities genuinely support learning goals, inclusion, and learner well-being.

### 6.2. Mediating Learning Processes

The second layer of the framework focuses on the learning processes through which development occurs. These processes explain how pedagogical practices influence learner growth and future-ready competence. Within the framework, these mediating processes are deeply interconnected rather than isolated elements. For example, learner autonomy is strengthened through reflection, critical evaluation, and ethical engagement with AI-generated content. Similarly, intercultural competence develops through collaborative inquiry and exposure to

diverse perspectives in digitally mediated communication. Ethical prompt literacy functions as a connecting mechanism across the framework because it supports responsible interaction with AI while reinforcing critical thinking, self-regulation, and human agency. The framework, therefore, views future-ready learning as a dynamic interaction among pedagogy, technology, ethics, and social participation.

Several key processes operate within this layer, including learner autonomy, collaboration, inquiry, reflection, self-regulation, critical thinking, formative feedback, and ethical evaluation of information. Rather than receiving knowledge passively, learners actively construct understanding through communication, exploration, and interaction. *Learner autonomy* is particularly important in AI-supported environments. Students need opportunities to make decisions, manage tasks, and evaluate information independently. Future-ready pedagogy, therefore, encourages learners to take responsibility for their learning while still receiving guidance from teachers.

Collaboration is another central process. Through group discussions, peer review, digital projects, and intercultural communication, students learn how to negotiate meaning, share perspectives, and solve problems collectively. These collaborative experiences strengthen communication skills while also supporting empathy and social awareness. *Reflection and self-regulation* also play major roles in the framework. Students are encouraged to monitor their progress, evaluate their learning strategies, and think critically about how they use technology. Reflection helps learners become more aware of ethical concerns such as bias, plagiarism, overreliance on AI, and responsible digital behavior.

*Critical evaluation of information* is especially important in AI-mediated learning environments. Learners need to question AI-generated responses, compare sources, verify accuracy, and recognize the limitations of automated systems (Holmes & Miao, 2023). In this framework, critical thinking is not treated as a separate skill but as an ongoing process integrated into language learning activities. Teachers support these mediating processes by designing meaningful tasks, guiding inquiry, providing feedback, and facilitating discussion. Their role is therefore deeply connected to human interaction and ethical guidance rather than simple content delivery.

### **6.3. Future-Ready Outcomes**

The third layer of the framework includes the competencies and dispositions learners develop through ethically grounded future-ready pedagogy. These outcomes extend beyond traditional language proficiency and prepare students for participation in technologically complex and globally connected societies. One important outcome is communicative competence. Learners develop the ability to use English effectively in diverse academic, professional, digital, and intercultural contexts. However, language proficiency alone is not considered sufficient for future readiness. The framework also emphasizes digital literacy. Students learn how to navigate digital environments, evaluate online information, interact responsibly with AI systems, and use technology critically and effectively (Nguyen et al., 2025). Critical thinking and creativity are additional outcomes. Learners become better able to analyze information, question assumptions, solve problems, and generate original ideas. These abilities are increasingly important in environments where AI can instantly generate large amounts of information but cannot replace human judgment and creativity. Intercultural competence is another major goal. Through authentic communication and exposure to diverse perspectives, students learn to communicate respectfully across cultural boundaries and recognize the value of linguistic and cultural diversity (Ambu-Saidi & Al Tobi, 2025). Adaptability and lifelong learning are also central outcomes of the framework. Because technologies and social conditions continue to change rapidly, learners need the ability to continue learning, adjusting, and developing new skills throughout their lives. Finally, ethical awareness forms one of the most important outcomes. Learners develop an understanding of fairness, privacy, transparency, sustainability, authorship, and responsible AI use. Ethical awareness helps students participate thoughtfully and responsibly in digital environments rather than interacting with technology passively.

### **6.4. Ethical Governance as the Surrounding Structure**

A defining feature of this framework is that ethics surrounds all dimensions of teaching and learning rather than functioning as a separate topic. Ethical governance influences pedagogical choices, classroom interaction, technology use, assessment practices, and educational outcomes. Several ethical principles guide the framework, including fairness, transparency, accountability, privacy, sustainability, inclusion, and human agency (Ofosu-Asare, 2026). These principles help ensure that educational innovation remains aligned with human values rather than market pressures or technological trends. Privacy protection is particularly important because many AI systems collect user data and learning analytics. Teachers and institutions, therefore, need to select tools responsibly and communicate openly about data use. Transparency is also essential. Students should understand that AI-generated outputs are probabilistic responses rather than unquestionable truths. Ethical pedagogy

encourages learners to verify information and remain critical users of technology. The framework also prioritizes human agency. AI systems may support learning, but they should not replace teacher judgment, learner creativity, or human interaction. Educational decisions should remain guided by human reflection, communication, and ethical responsibility. Equity and inclusion are equally important. Future-ready education should ensure that technological innovation does not deepen social inequalities or exclude learners with limited digital access. Inclusive design and accessibility, therefore, remain central concerns within the framework.

#### **6.5. The Role of Teachers within the Framework**

Teachers occupy a central position in the framework because they connect pedagogy, technology, and ethics in practical classroom contexts. Their responsibilities extend far beyond delivering content. Teachers act as instructional designers who create meaningful learning experiences using both traditional and digital resources. They also serve as facilitators who guide collaboration, inquiry, and reflective learning processes. Perhaps most importantly, teachers function as ethical mentors. They help students interpret AI-generated information, question assumptions, recognize bias, and make responsible decisions about technology use (Barjesteh et al., 2026). This expanded role highlights the importance of teacher readiness and professional development. Teachers need ongoing support to understand emerging technologies, develop digital competence, and respond to ethical challenges in AI-supported learning environments (Isaee & Barjesteh, 2023).

#### **6.6. Significance of the Framework**

One major strength of the framework is its integrative nature. It does not separate pedagogy, technology, and ethics into isolated areas. It shows how these dimensions influence one another continuously within educational practice. The framework also moves beyond technology-centered thinking. AI tools are valuable only when they support meaningful learning processes and contribute to clearly defined educational goals. For example, using AI for brainstorming becomes educationally meaningful when students critically evaluate generated ideas, revise them thoughtfully, and maintain ownership of the final work. Another strength is the framework's flexibility. It can be adapted to different ELT contexts, educational levels, and technological conditions. Teachers may apply the framework in online, blended, or face-to-face environments while adjusting activities according to learner needs and institutional realities. Overall, the proposed framework provides a practical and theoretical foundation for ethical future-ready ELT in the age of AI. It emphasizes that successful language education requires more than adopting new technologies. It requires thoughtful integration of pedagogy, ethics, communication, and human-centered learning principles within rapidly changing digital environments.

### **7. CHALLENGES IN IMPLEMENTING ETHICAL FUTURE-READY PEDAGOGY**

Although ethical and AI-responsive future-ready pedagogy offers many opportunities for innovation in ELT, implementing this approach is not always easy. Teachers, institutions, and learners may face practical, technological, pedagogical, and ethical difficulties during the process of integrating AI into education. These challenges do not reduce the importance of future-ready pedagogy, but they show that successful implementation requires careful planning, ongoing support, and critical reflection. Educational innovation is often more complex than simply introducing new digital tools into classrooms. Effective implementation depends on teacher readiness, institutional leadership, equitable access to technology, ethical awareness, and sustainable educational practices. Without these conditions, even advanced technologies may fail to improve learning meaningfully.

The following sections discuss some of the major challenges that schools, universities, and teachers may encounter when implementing ethical future-ready pedagogy in ELT contexts.

#### **7.1. Teacher Preparedness**

One of the most significant challenges involves teacher preparedness. Many language teachers are interested in using AI and digital tools, but not all feel confident in selecting appropriate technologies, designing effective activities, or addressing ethical concerns related to AI use (Barjesteh et al., 2026). Some teachers may have strong pedagogical knowledge but limited digital competence, while others may understand technology but feel uncertain about how to integrate it meaningfully into language teaching. Rapid technological development also makes it difficult for educators to remain updated about new tools, changing policies, and emerging ethical concerns. Effective implementation, therefore, requires continuous professional development rather than one-time training sessions. Teachers need opportunities to experiment with AI tools, discuss classroom experiences, share challenges, and develop practical strategies for responsible use (Isaee & Barjesteh, 2023). Professional development should address not only technical skills but also pedagogy, ethics, assessment, privacy, and critical digital literacy. Teacher confidence is also important because uncertainty or fear may reduce willingness to

experiment with innovative approaches. Some educators may worry that AI will weaken academic standards or replace important aspects of teaching. Supportive learning communities and institutional guidance can help teachers engage with these changes more confidently and critically.

### **7.2. Institutional Policies and Leadership**

Successful implementation of future-ready pedagogy also depends heavily on institutional policies and leadership. Schools and universities need clear guidelines regarding AI use, academic integrity, data privacy, authorship, and acceptable classroom practices (McDonald et al., 2025). Without institutional guidance, teachers and students may develop inconsistent or contradictory practices. For example, some instructors may completely prohibit AI use, while others may encourage unrestricted use without discussing ethical concerns. Such inconsistency may create confusion, inequality, and uncertainty among learners. Educational leadership, therefore, plays a central role in supporting ethical AI integration. Institutions need to provide infrastructure, digital resources, technical support, and professional development opportunities that align with educational goals. Administrators should also encourage open discussion about the opportunities and risks of AI rather than treating technology as either completely positive or completely harmful. Strong institutional leadership can also help create balanced policies that support innovation while protecting fairness, privacy, and educational quality. Policies should remain flexible because AI technologies continue evolving rapidly.

### **7.3. Unequal Access to Technology**

Another major challenge involves unequal access to technology and digital resources. Not all students have reliable internet access, personal devices, or access to advanced AI platforms. Some learners may depend entirely on institutional resources, while others may use paid AI services with more advanced features (Petko et al., 2018). These differences may create unequal educational opportunities and widen existing social and economic inequalities. Learners with stronger technological access may receive more opportunities for personalized learning, language practice, and digital skill development than students with limited resources. Future-ready pedagogy, therefore, needs to remain flexible and inclusive. Teachers should design activities that can be completed using different levels of technological access. Educational institutions also need to consider affordability and accessibility when selecting platforms and digital tools. Accessibility should also include support for learners with disabilities and different learning needs. Ethical educational design requires technologies that are usable, inclusive, and adaptable to diverse student populations (Listopadzka et al., 2025).

### **7.4. Resistance to Change**

Resistance to change is another common challenge in educational innovation. Some teachers, students, parents, and institutions may feel cautious or skeptical about AI integration because of concerns related to plagiarism, misinformation, overreliance on technology, or loss of teacher authority. Some educators may also question whether AI genuinely improves learning outcomes or simply creates additional complexity in classrooms. Others may worry that technology reduces meaningful human interaction and weakens traditional educational values. These concerns are understandable and should not be ignored. Ethical future-ready pedagogy requires open dialogue rather than forced adoption of technology. Teachers and institutions should evaluate AI critically and make decisions based on educational goals rather than pressure to follow technological trends (Verboom et al., 2025). Gradual implementation may help reduce resistance. Small-scale experimentation, collaborative discussion, and evidence-based reflection often create more positive attitudes than abrupt institutional mandates. When educators feel involved in decision-making, they are more likely to engage constructively with innovation.

### **7.5. Assessment Challenges**

Assessment becomes more complicated in AI-supported learning environments. Traditional examinations often focus mainly on memorization or individual written performance, but future-ready pedagogy emphasizes broader competencies such as collaboration, creativity, critical thinking, ethical awareness, adaptability, and digital literacy. These competencies are more difficult to measure through conventional testing methods. Teachers may therefore need to use portfolios, presentations, project-based assessment, reflective writing, peer assessment, and performance-based tasks to evaluate learner development more effectively (Nguyen et al., 2025). AI also raises questions about authorship and originality. When students use AI-supported tools during writing or research, teachers may struggle to determine how much work reflects the learner's own thinking. This issue creates uncertainty regarding plagiarism, academic honesty, and fair evaluation. To address these concerns, educators need clear assessment guidelines that explain acceptable AI use and emphasize process-oriented learning rather than only final products. Reflection, revision history, oral explanation, and collaborative

evaluation may help teachers assess learner understanding more accurately. Designing these alternative assessments, however, can require significant time, training, and institutional support. Teachers may therefore need additional resources and collaboration opportunities to implement them effectively.

### **7.6. Rapid Technological Change**

AI technologies evolve extremely quickly. New tools, features, pricing systems, and privacy policies appear regularly, sometimes changing within only a few months. Educational institutions often struggle to adapt to these rapid developments because curriculum design, policy creation, and teacher training usually move more slowly. As a result, teachers may spend considerable time learning systems that later become outdated or significantly modified. Students may also encounter inconsistent experiences when platforms change unexpectedly or introduce new limitations. This rapid change creates uncertainty and makes long-term planning difficult. Instead of focusing only on specific tools, future-ready pedagogy should therefore emphasize enduring principles such as critical thinking, ethical awareness, adaptability, and responsible technology use (Holmes & Miao, 2023). A flexible mindset is essential in AI-supported education. Teachers and institutions should remain open to experimentation while recognizing that technologies will continue changing over time.

### **7.7. Balancing Innovation and Human Values**

Perhaps the most important challenge is balancing technological innovation with human values. Language learning is fundamentally social and human. It involves communication, empathy, identity formation, intercultural understanding, emotional expression, and collaboration. If education becomes overly focused on automation and efficiency, important human dimensions of learning may be weakened. AI systems can support communication and feedback, but they cannot fully replace authentic human interaction, emotional understanding, or teacher mentorship (Ofosu-Asare, 2026). Future-ready pedagogy, therefore, needs to maintain human agency at the center of educational practice. Teachers should continue guiding discussions, supporting learner development, encouraging creativity, and helping students reflect critically on technology use. This balance requires continuous ethical reflection. Educators need to ask not only whether technology can be used, but also whether its use genuinely supports meaningful learning, inclusion, well-being, and social responsibility.

### **7.8. Emotional and Psychological Concerns**

Another emerging challenge involves the emotional and psychological effects of AI-supported learning environments. Some students may experience anxiety, confusion, or pressure when interacting with rapidly changing technologies. Others may compare their abilities to AI-generated outputs and feel less confident in their own creativity or language skills. Overdependence on digital systems may also reduce face-to-face communication and social interaction. In language education, this is particularly important because communication skills develop through authentic interpersonal experiences. Teachers, therefore, need to create supportive learning environments where technology enhances human interaction rather than replacing it. Classroom discussions about AI limitations, digital well-being, and responsible use can help learners develop healthier relationships with technology (Isaee & Barjesteh, 2026b).

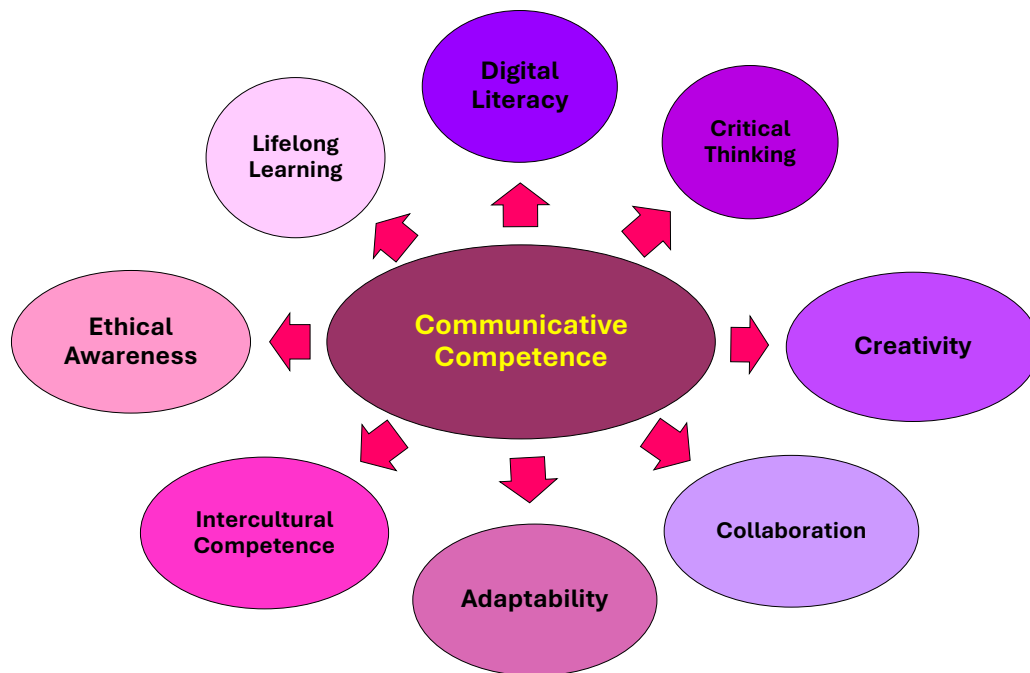
### **7.9. Sustainability and Long-Term Implementation**

Sustaining future-ready pedagogy over time is another challenge. Educational innovation often begins enthusiastically, but long-term implementation requires consistent support, funding, infrastructure, and professional development. Some institutions may adopt AI technologies quickly without fully considering long-term maintenance, ethical concerns, or teacher workload. If technologies become too expensive or difficult to manage, implementation efforts may gradually weaken. Sustainable implementation, therefore, requires realistic planning and balanced expectations. Educational institutions should adopt technologies carefully and focus on approaches that genuinely improve learning rather than following temporary technological trends. Long-term sustainability also includes environmental responsibility. Large-scale AI systems consume significant energy and digital resources, making thoughtful and purposeful technology use increasingly important (Listopadzka et al., 2025). Taken together, these challenges show that implementing ethical future-ready pedagogy involves much more than introducing new digital tools into classrooms. Successful implementation requires teacher preparedness, institutional leadership, equitable access, ethical awareness, flexible assessment, and ongoing reflection about the human purpose of education. Despite these challenges, AI can still become a valuable educational resource when used thoughtfully and responsibly. By addressing these obstacles critically and collaboratively, educators can create more inclusive, engaging, and ethically grounded forms of ELT that prepare learners for participation in rapidly changing digital societies.

## 8. IMPLICATIONS, LIMITATIONS, AND CONCLUSION

The ethical and AI-responsive framework proposed in this paper offers several important implications for ELT, teacher education, curriculum development, educational research, and policy making. As artificial intelligence becomes increasingly present in educational settings, language education must move beyond narrow views of technology as simply a tool for efficiency or automation. Instead, AI integration should support meaningful communication, ethical awareness, critical thinking, and human-centered learning.

The framework presented in this study emphasizes that future-ready ELT is not only about technological adaptation. It is also about preparing learners to participate responsibly, critically, and creatively in digitally mediated societies. For this reason, the implications of the framework extend to multiple dimensions of educational practice and decision-making. Figure 2 illustrates the interconnected competencies that support ethical future-ready ELT in AI-mediated learning environments.



**Figure 2.** Core competencies of ethical future-ready ELT

As illustrated in Figure 2, these competencies are interconnected rather than isolated abilities. For example, digital literacy supports critical thinking, while intercultural competence strengthens communication and ethical awareness. Similarly, adaptability and lifelong learning help learners respond to changing technological and social conditions. The figure, therefore, reflects the broader argument of this paper that effective ELT in AI-mediated environments requires a balanced integration of linguistic, digital, cognitive, ethical, and intercultural competencies.

### 8.1. Implications for English Language Teachers

One of the most important implications of this framework concerns the changing role of English language teachers. In AI-mediated classrooms, teachers are no longer simply providers of information. Instead, they function as facilitators, designers of learning experiences, ethical guides, and critical mediators between learners and technology. Teachers are encouraged to use AI and digital tools with clear pedagogical purposes rather than adopting technologies simply because they are innovative or popular (Lo et al., 2024). Educational technologies should support meaningful interaction, learner autonomy, reflection, collaboration, and authentic communication. The framework also highlights the importance of helping learners critically evaluate AI-generated information. Students should learn how to question outputs, compare sources, recognize bias, and verify accuracy rather than accepting automated responses unquestioningly (Holmes & Miao, 2023). Teachers, therefore, play a central role in developing students' critical digital literacy and ethical awareness. Another important implication involves learner ownership and creativity. Teachers need to create classroom environments where students use AI as a support tool while still maintaining responsibility for their own ideas, decisions, and language production. Ethical AI use requires learners to remain active participants in the learning process rather than passive consumers of automated content. The framework further suggests that teachers

should design activities that encourage communication, creativity, inquiry, collaboration, and reflection. These activities may include project-based learning, AI-assisted discussion tasks, intercultural communication projects, reflective journals, digital storytelling, and collaborative problem-solving activities.

### **8.2. Implications for Curriculum Development**

The proposed framework also has important implications for curriculum design in ELT programs. Traditional language curricula often focus mainly on grammar, vocabulary, reading, writing, listening, and speaking skills. Although these areas remain important, future-ready education requires broader learning outcomes that reflect contemporary technological and social realities. Curriculum developers are encouraged to integrate competencies such as digital literacy, ethical prompt literacy, critical thinking, creativity, adaptability, intercultural competence, collaboration, and lifelong learning into language education programs (Choo et al., 2024). This broader perspective recognizes that learners need more than linguistic accuracy to participate effectively in modern societies. Students should also learn how to navigate digital environments responsibly, communicate across cultures, evaluate online information critically, and adapt to changing technological conditions. Learning activities should therefore move beyond isolated language exercises and include authentic, meaningful, and problem-based tasks. Students may engage in collaborative digital projects, multimedia presentations, inquiry-based discussions, intercultural exchanges, and ethical evaluation of AI-generated materials. The framework also encourages curriculum designers to create flexible and inclusive learning environments that consider different levels of technological access and learner diversity. Ethical future-ready pedagogy should support accessibility, inclusion, and equitable participation for all learners.

### **8.3. Implications for Teacher Education and Professional Development**

Teacher education programs can benefit significantly from the ideas presented in this framework. As AI technologies continue entering educational settings, future teachers need preparation that combines pedagogy, technological literacy, and ethical reasoning. Teacher education should therefore include training related to AI literacy, digital pedagogy, ethical technology use, data privacy, academic integrity, algorithmic bias, and responsible classroom implementation (Isaee & Barjesteh, 2023). Professional development programs should move beyond technical demonstrations of digital tools and help educators understand the broader educational and social implications of AI. Teachers need opportunities to discuss real classroom scenarios, ethical dilemmas, assessment challenges, and strategies for balancing innovation with human-centered teaching. Collaborative professional learning communities may also help teachers share experiences, reflect on challenges, and develop confidence in integrating AI meaningfully into language teaching practice. Importantly, the framework suggests that teacher readiness is not a fixed condition but an ongoing developmental process. Because technologies continue changing rapidly, professional learning should remain continuous and adaptive rather than limited to short-term training sessions.

### **8.4. Implications for Educational Research**

The framework also offers several directions for future research. Since the present study is conceptual, an empirical investigation is needed to examine how ethical future-ready pedagogy operates in real educational contexts. Researchers may explore how teachers and learners perceive AI-supported instruction, how ethical concerns influence classroom practice, and how different pedagogical approaches affect learner outcomes (Risdiyanto et al., 2025). Comparative studies across educational levels, cultural settings, and technological environments may help identify factors that support or limit successful implementation. Future research can also investigate the relationship between AI use and learner autonomy, motivation, creativity, intercultural communication, and ethical awareness. Mixed-methods research combining qualitative and quantitative approaches may provide a deeper understanding of how future-ready competencies develop over time. Another important research area involves assessment. Researchers may examine how competencies such as ethical prompt literacy, digital literacy, critical thinking, and collaboration can be evaluated effectively in AI-supported learning environments. Longitudinal research may also help educators understand the long-term effects of AI integration on language development, teacher roles, learner identity, and educational equity.

### **8.5. Policy Implications**

The framework additionally carries important policy implications for schools, universities, and educational authorities. As AI becomes increasingly integrated into teaching and learning, educational institutions need clear and balanced policies that guide responsible implementation. Policies should address issues such as privacy protection, data governance, transparency, academic integrity, accessibility, and acceptable uses of AI in educational settings (McDonald et al., 2025). Institutions also need policies that protect teacher autonomy and

professional judgment rather than imposing rigid technological requirements. Equity should remain a major policy concern. Educational institutions and governments should work to reduce digital inequalities by improving access to devices, internet connectivity, and inclusive learning resources. The framework also suggests that policy decisions should remain guided by educational values rather than commercial interests or technological trends alone. Responsible innovation requires careful evaluation of whether technologies genuinely support learning, inclusion, and learner well-being. In addition, policymakers should recognize that ethical AI integration is not only a technical issue but also a social and cultural one. Educational policies, therefore, need to consider human rights, linguistic diversity, cultural representation, and sustainability alongside technological advancement.

#### 8.6. Limitations of the Study

Despite its contributions, this study has several limitations. First, the paper is conceptual rather than empirical. The proposed framework is based on theoretical analysis and synthesis of existing literature rather than classroom-based data collection. As a result, the framework still needs empirical validation in different educational contexts. Second, AI technologies continue evolving very rapidly. Tools, policies, pricing systems, and platform capabilities may change within short periods of time. Some examples and practices discussed in this paper may therefore become outdated as technologies develop further. Third, the implementation of future-ready pedagogy may differ significantly across educational systems, cultural contexts, and institutional conditions. Factors such as infrastructure, teacher preparedness, educational policy, and technological access may influence how the framework operates in practice. Another limitation involves the complexity of ethical issues surrounding AI. Topics such as algorithmic bias, surveillance, authorship, and digital inequality continue to develop and may require deeper investigation beyond the scope of this paper. Nevertheless, although technologies may continue changing, the core ethical principles emphasized in this study (including fairness, transparency, human agency, inclusion, and responsible technology use) are likely to remain important foundations for educational practice.

### 9. CONCLUSION

In conclusion, future-ready pedagogy should be understood as an ethical educational commitment rather than a purely technological innovation. The purpose of English language teaching is not simply to help learners use emerging digital tools, but to prepare them to communicate, think, collaborate, and participate responsibly in an increasingly AI-mediated world. By integrating learner-centered pedagogy, generative AI, digital literacy, ethical prompt literacy, and human-centered educational values, the proposed framework offers a coherent and ethically grounded vision for contemporary ELT.

The framework also highlights that technological innovation alone cannot guarantee meaningful learning. Educational value depends on how technologies are designed, interpreted, and used within socially responsible pedagogical practices. For this reason, teachers remain central as facilitators, ethical guides, and designers of reflective learning environments that support both human development and responsible digital participation.

As AI technologies continue to evolve, language education will need ongoing critical reflection, interdisciplinary dialogue, and ethical awareness. Future-ready pedagogy should therefore remain flexible, reflective, and responsive to changing educational realities while continuing to protect fairness, inclusion, learner agency, and intercultural understanding. Ultimately, the aim is not to adapt learners passively to artificial intelligence, but to help them engage with technological systems critically, responsibly, creatively, and with full human agency.

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#### References

- Alzubi, A. A. F., & Alelaiwi, A. S. (2025). Exploring EFL university teachers' perceptions of AI-generative tools in Saudi Arabia: A mixed-methods study. *Discover Computing*, 28(1), 282. <https://doi.org/10.1007/s10791-025-09793-x>
- Ambu-Saidi, B. A., & Al Tobi, F. S. (2025). Transforming English language classrooms: Empowering future-ready learners through critical thinking and creativity in Oman. *Journal of Social Science and Education Research Studies*, 5(10), 981-984. <https://ijssers.org/wp-content/uploads/2025/10/05-3110-2025.pdf>
- Barjesteh, H., Isaee, H., & Manoochehrzadeh, M. (2026). From skill acquisition to professional agency: Rethinking EFL teachers' professional development in the age of AI. *Indonesian Journal of Pedagogy and Teacher Education*, 4(1), 20-30. <https://ejournal.gomit.id/ijopate/article/download/598/434>
- Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). Two decades of artificial intelligence in education. *Educational Technology & Society*, 25(1), 28-47. <https://www.jstor.org/stable/48647028>
- Choo, S. S., Liu, W. C., & Chua, B. L. (2024). *Developing future-ready learners for a global age*. Taylor & Francis.
- Du, J., & Daniel, B. K. (2024). Transforming language education: A systematic review of AI-powered chatbots for English as a foreign language speaking practice. *Computers and Education: Artificial Intelligence*, 6, 100230. <https://doi.org/10.1016/j.caeai.2024.100230>
- Holmes, W., & Miao, F. (2023). *Guidance for generative AI in education and research*. UNESCO Publishing.
- Isaee, H. (2026a). AI in Iranian higher education: A mixed-methods study of ethical tensions and L2 learning challenges. *Forum for Education Studies*, 4(1). <https://doi.org/10.59400/fes3881>
- Isaee, H. (2026b). Iranian EFL instructors' perspectives on integrating artificial intelligence applications into English language teaching and learning. *Journal of AI in ELT and Applied Linguistics*, 2(1), 14-24. [https://www.researchgate.net/profile/Hosseini-Isaee/publication/401263954\\_Iranian\\_EFL\\_Instructors'\\_Perspectives\\_on\\_Integrating\\_Artificial\\_Intelligence\\_Applications\\_into\\_English\\_Language\\_Teaching\\_and\\_Learning/links/69a1dc5016faea00ba9a3ef5/Iranian-EFL-Instructors-Perspectives-on-Integrating-Artificial-Intelligence-Applications-into-English-Language-Teaching-and-Learning.pdf](https://www.researchgate.net/profile/Hosseini-Isaee/publication/401263954_Iranian_EFL_Instructors'_Perspectives_on_Integrating_Artificial_Intelligence_Applications_into_English_Language_Teaching_and_Learning/links/69a1dc5016faea00ba9a3ef5/Iranian-EFL-Instructors-Perspectives-on-Integrating-Artificial-Intelligence-Applications-into-English-Language-Teaching-and-Learning.pdf)
- Isaee, H., & Barjesteh, H. (2023). EFL teachers' professional development needs: A comparative phenomenological analysis for face-to-face and online instruction. *Journal of Studies in Learning and Teaching*, 12(2), 45-56. [https://journals.iau.ir/article\\_705784\\_5628e1dd65c8fc95c5522f9059873041.pdf](https://journals.iau.ir/article_705784_5628e1dd65c8fc95c5522f9059873041.pdf)
- Isaee, H., & Barjesteh, H. (2026a). Exploring teachers' and learners' perceptions of AI-supported pedagogical tools in English language teaching. *Discover Artificial Intelligence*, 6, 224. <https://doi.org/10.1007/s44163-026-00933-w>
- Isaee, H., & Barjesteh, H. (2026b). Beyond the self in AI-enhanced EFL classrooms: Cultivating self-transcendent emotions, well-being, and speaking fluency through intelligent simulations. *Hu Arenas*. <https://doi.org/10.1007/s42087-026-00602-5>
- Kaempf, S. (2022). Getting Our Teaching "Future Ready". In: Szarejko, A.A. (eds) *Pandemic Pedagogy. Political Pedagogies*. Palgrave Macmillan, Cham. [https://doi.org/10.1007/978-3-030-83557-6\\_12](https://doi.org/10.1007/978-3-030-83557-6_12)
- Kiryakova, G., & Angelova, N. (2023). ChatGPT—A Challenging Tool for University Professors in Their Teaching Practice. *Education Sciences*, 13(10). <https://doi.org/10.3390/educsci13101056>
- Lalithakumari, S., & Vijayarani, K. (2024). Role of innovative pedagogy in teaching and fostering digital empowerment of future-ready educators. *As the editors of Transforming Learning: The Power of Educational*, 251.
- Lightbown, P. M., & Spada, N. (2021). *How languages are learned*, 5th edition. Oxford University Press.
- Listopadzka, E., Klepacka-Dunajko, I., & Prokopowicz, D. (2025). Teachers as architects of green readiness: Future-ready competencies in education. *Procedia Computer Science*, 270, 928-936. <https://doi.org/10.1016/j.procs.2025.09.213>
- Liu, G. L., & Zhao, X. (2025). The predictive effects of sociobiographical variables, English learning confidence, and digital competence on AI-mediated informal digital learning of English (AI-IDLE). *International Journal of Applied Linguistics*. Advance online publication. <https://doi.org/10.1111/ijal.70010>
- 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(1), 50. <https://link.springer.com/content/pdf/10.1186/s40561-024-00342-5.pdf>

- Manoochehrzadeh, M., Isaee, H., & Barjesteh, H. (2025). Artificial intelligence in project-based learning: A systematic review of its role in English language acquisition and pedagogical innovation. *Indonesian Journal of Pedagogy and Teacher Education*, 3(3), 81-91. <https://ejournal.gomit.id/index.php/ijopate/article/view/502>
- Mayer, R. E. (2005). *The Cambridge handbook of multimedia learning*. Cambridge University Press.
- McDonald, N., Johri, A., Ali, A., & Collier, A. H. (2025). Generative artificial intelligence in higher education: Evidence from an analysis of institutional policies and guidelines. *Computers in Human Behavior: Artificial Humans*, 3, 100121. <https://doi.org/10.1016/j.chbah.2025.100121>
- Moundridou, M., Matzakos, N., & Doukakis, S. (2024). Generative AI tools as educators' assistants: Designing and implementing inquiry-based lesson plans. *Computers and Education: Artificial Intelligence*, 7, 100277. <https://doi.org/10.1016/j.caeai.2024.100277>
- Nair, H. B. (2024, April). Fostering future-ready educators: Integrating work-integrated learning and innovative pedagogical practices in pre-service teacher education. In *International conference on work integrated learning* (pp. 307-318). Springer Nature. [https://link.springer.com/chapter/10.1007/978-981-96-0201-8\\_17#citeas](https://link.springer.com/chapter/10.1007/978-981-96-0201-8_17#citeas)
- Nguyen, A., Duong, A. T., Nguyen, D. T. B., Lai, V. T. T., & Dang, B. (2025). Guidelines for learning design and assessment for generative artificial intelligence-integrated education: a unified view. *Information and Learning Sciences*, 126(7-8), 491-512. <https://www.emerald.com/ils/article/126/7-8/491/1268297>
- Ofosu-Asare, Y. (2026). Guiding the future: developing an ethical framework for generative AI use in education. *The International Journal of Information and Learning Technology*, 43(1), 26-44. <https://www.emerald.com/ijilt/article/43/1/26/1332290>
- Petko, D., Prasse, D., & Cantieni, A. (2018). The interplay of school readiness and teacher readiness for educational technology integration: A structural equation model. *Computers in the Schools*, 35(1), 1-18.
- Priya, M. K., & Shamugapriya, S. (2025, July). AI integration, computational pedagogy, and innovative pedagogy: A framework for future-ready education. In *International e-conference proceedings* (p. 237).
- Risdianto, E., Shirzadi, S., Rad, N. F., Barjesteh, H., & Isaee, H. (2025). Advancing English language education through artificial intelligence: A review of benefits and challenges. *Journal of New Trends in English Language Learning (JNTELL)*, 4(Special Issue). <https://doi.org/10.57647/JNTELL.2025.si-01>
- Schlam Salman, J., & Inbar-Lourie, O. (2023). Exploring English language teachers' beliefs about future readiness: Developing pedagogical practices for the 21st century. *Language Teaching Research*, 13621688231179515. <https://journals.sagepub.com/doi/abs/10.1177/13621688231179515>
- Slamet, J. (2024). Potential of ChatGPT as a digital language learning assistant: EFL teachers' and students' perceptions. *Discover Artificial Intelligence*, 4(1), 3145–3182. <https://doi.org/10.1007/s44163-024-00143-2>
- van den Berg, G. (2025). Teachers' experiences of using artificial intelligence from an open distance learning context: successes, challenges, and strategies for success. *Discover Education*, 4(1), 3145–3182. <https://doi.org/10.1007/s44217-025-00596-2>
- Verboom, A. D. P. R., Pais, L., Zijlstra, F. R. H., Oswald, F. L., & Santos, N. R. dos. (2025). Perceptions of artificial intelligence in academic teaching and research: A qualitative study from AI experts and professors' perspectives. *International Journal of Educational Technology in Higher Education*, 22(1), 46. <https://doi.org/10.1186/s41239-025-00546-w>
- Wang, X. (2024). Research on an oral English learning system integrating AI speech data recognition and a speech quality evaluation algorithm. *Journal of Electrical Systems*, 20(5s), 2466–2477. <https://doi.org/10.52783/jes.2688>
- Welding, L. (2023). *Half of college students say using AI is cheating*. BestColleges. <https://www.bestcolleges.com/research/college-students-ai-tools-survey>
- Zhang, W. (2024). Rethinking language education: Understanding optimal learning conditions, designing effective teaching, and preparing future-ready teachers. *RELC Journal*, 55(3), 621-624. <https://journals.sagepub.com/doi/full/10.1177/00336882241292211>