

Article

Reconceptualising Business English Curriculum through AI Literacy: A Critical Examination of Pedagogical Gaps and Curriculum Transformation in Higher Education

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Abstract: The rapid expansion of artificial intelligence (AI) has transformed communication practices, professional expectations, and knowledge production in contemporary workplaces. These changes create new demands for higher education, particularly for Business English programmes that aim to prepare students for participation in global professional environments. However, current Business English curricula often remain grounded in conventional language-training models and fail to address AI literacy in a systematic and critical way. This paper critically examines the limitations of existing Business English curriculum design in relation to AI literacy and argues that the problem is not simply the absence of new content, but a deeper mismatch between curriculum knowledge, pedagogy, and workplace realities. Drawing on scholarship in AI literacy, English for Specific Purposes (ESP), and curriculum theory, the study identifies three interrelated problems: conceptual ambiguity surrounding AI literacy, pedagogical conservatism in Business English teaching, and insufficient alignment between curriculum materials and AI-mediated workplace communication. The paper proposes a reconceptualised framework for integrating AI literacy into Business English education through epistemic restructuring, pedagogical innovation, and socio-institutional collaboration. It argues that AI literacy should not be reduced to technical tool use, but understood as a critical, ethical, and communicative competence. The study contributes to debates on digital transformation in higher education by demonstrating how Business English curriculum reform can respond more effectively to technological change and global employability demands, while emphasizing the importance of developing students' critical thinking skills and ethical awareness in an AI-driven professional landscape.

Keywords: artificial intelligence literacy; business english pedagogy; curriculum transformation; digital competence; educational innovation; workplace communication

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1. Introduction

The widespread adoption of artificial intelligence has significantly transformed the production, mediation, and evaluation of communication within professional environments. From the automation of email drafting and machine translation to data-driven decision-making and AI-enhanced customer service, the role of intelligent technologies in contemporary workplaces is becoming increasingly prominent [1, 2]. This transformation carries substantial implications for higher education, particularly for disciplines such as Business English, which are closely associated with employability, workplace communication, and professional practice [3, 4]. As AI continues to evolve, it is crucial for educational institutions to adapt their curricula to prepare students for the dynamic communicative landscapes they will encounter in their professional lives [5].

Business English has traditionally been situated within the domain of English for Specific Purposes, where the main goal is to cultivate learners' communicative competence for specific professional scenarios. Historically, this goal was largely accomplished through a blend of genre-based writing instruction, oral presentation

practice, negotiation exercises, and intercultural communication training. While these elements remain vital, the communicative environment for which students are being prepared has undergone a profound transformation [6]. Communication is no longer solely interpersonal, cross-cultural, or transactional in the conventional sense; it has become increasingly algorithmic, multimodal, and mediated by artificial intelligence. This shift necessitates a reevaluation of how Business English is taught, ensuring that students are equipped to navigate and excel in this new landscape.

Despite these changes, Business English curricula have often been slow to adapt. In many instances, the curriculum continues to emphasize traditional linguistic forms while neglecting the new communicative conditions introduced by AI technologies [3, 7]. Students may be instructed on how to compose a business email, yet they may not be taught how to critically assess AI-generated business messages [8, 9]. They might learn the language of presentations, but not how AI tools influence audience analysis, data visualization, or rhetorical strategies. Discussions on professionalism and intercultural sensitivity may occur, but there is often insufficient guidance on algorithmic bias, data ethics, or the credibility of AI-supported communication. This issue is not merely one of curricular omission; it represents a structural lag between educational design and the evolving communicative demands of the workplace. Addressing this lag is essential for preparing students to engage effectively in AI-mediated professional environments [10].

In recent years, the concept of AI literacy has gained significant traction in educational research. It is increasingly recognized that students need not only operational familiarity with AI tools but also the ability to comprehend how AI systems function, how they influence decision-making, and how their outputs should be critically evaluated [1, 11]. However, much of this discourse has been concentrated in STEM, computer science, or general digital literacy contexts. Comparatively little attention has been devoted to exploring what AI literacy might entail in language-related disciplines, and even less to how it should be integrated into Business English curriculum materials and pedagogy [3, 12]. This gap highlights the need for a more comprehensive approach to AI literacy in language education, ensuring that students are prepared to navigate the complexities of AI-mediated communication in their professional lives [13].

This paper contends that integrating AI literacy into Business English requires more than merely incorporating new topics or digital tools into existing courses [14]. A fundamental reconceptualization of the curriculum is necessary: determining what constitutes valuable knowledge, identifying the competencies that should be prioritized, and devising pedagogical strategies that prepare students to engage critically with AI-mediated professional communication [15, 16]. By drawing on research in AI literacy, English for Specific Purposes theory, and curriculum theory, this paper critically examines current limitations and proposes a framework for transforming the curriculum in higher education [16, 17]. Such a transformation is essential to equip students with the skills and knowledge needed to thrive in an increasingly AI-driven professional world.

2. Literature Review

2.1. AI literacy as an educational construct

AI literacy is commonly understood as the knowledge and competencies required to understand, use, evaluate, and interact with AI systems. It encompasses more than just technical awareness; it involves critical judgment, awareness of limitations, and reflection on broader implications [18, 19]. This includes ethical reasoning, human-AI interaction, and social understanding. These perspectives are crucial because they expand the discussion beyond simplistic notions of digital skills [13]. By integrating these elements, AI literacy becomes a multifaceted construct that prepares individuals not only to engage with AI technologies but also to critically assess their impact on society. This comprehensive approach ensures that learners are equipped with the necessary skills to navigate the complexities of AI in various contexts, fostering a more informed and responsible use of technology.

However, the concept of AI literacy remains unevenly developed across educational fields [9, 11]. In some contexts, it is framed primarily as a functional or instrumental competence, focusing on the ability to operate AI-enabled tools efficiently. While such a perspective addresses immediate labor market needs, it risks narrowing education to mere tool use and productivity [10]. A more critical perspective suggests that AI literacy must include reflection on power, bias, transparency, accountability, and the evolving nature of knowledge itself. From this viewpoint, students should not only know how to use AI but also how to question and critically evaluate it. This broader understanding encourages learners to engage with AI technologies in a way that is both informed and reflective, promoting a deeper comprehension of the ethical and societal implications of AI.

This distinction is of significant importance for curriculum design. If AI literacy is treated merely as technical competence, it can be superficially appended to existing curricula. However, if it is understood as a critical and communicative competence, then deeper curriculum reform becomes necessary [6]. This paper adopts the latter position, advocating for a comprehensive integration of AI literacy into educational frameworks. Such an approach ensures that learners are not only proficient in using AI technologies but are also capable of engaging in meaningful discourse about their implications [11]. By embedding AI literacy into the core of educational practices, institutions can better prepare students for the challenges and opportunities presented by the rapidly evolving technological landscape.

2.2. Business English, ESP, and the problem of curricular inertia

Business English has traditionally been influenced by the principles of English for Specific Purposes (ESP), which emphasize the significance of needs analysis, discourse specificity, and relevance to target situations [6]. Scholars in the field of ESP have consistently maintained that language instruction should be firmly rooted in the communicative demands of specific professional or academic domains. Theoretically, this approach should render Business English particularly adaptable to technological advancements, as workplace communication is its primary focus [17]. By aligning language teaching with the evolving demands of professional environments, Business English can potentially offer learners the tools necessary to navigate the complexities of modern business interactions. This adaptability is crucial in ensuring that learners are equipped with the skills to effectively engage in diverse communicative contexts, thereby enhancing their professional competencies.

In reality, however, the evolution of curricula often trails behind the rapid pace of social and technological advancements. Business English teaching materials frequently continue to depict relatively stable and conventional communicative scenarios, such as formal meetings, written correspondence, and cross-cultural negotiations [12]. These materials may not fully engage with the increasingly digital and automated nature of contemporary business communication. Textbooks, in particular, often serve as conservative pedagogical tools; they establish what is considered teachable knowledge but can also hinder innovation when they fail to incorporate the changing realities of the business world. This lag in curricular adaptation can result in a disconnect between educational content and the actual communicative practices prevalent in modern business environments, thereby limiting the effectiveness of language instruction in preparing learners for real-world challenges.

This situation creates a central tension within Business English education [18]. On one hand, the field asserts its practical relevance and responsiveness to workplace needs. On the other hand, many curricula continue to be shaped by outdated assumptions about communication that no longer fully align with professional realities [11]. This issue becomes particularly pronounced in contexts where communication mediated by artificial intelligence is becoming increasingly normalized. Despite this shift, educational content often still assumes a purely human-centered, text-based communication model. This discrepancy highlights the need for curricula to evolve and incorporate new

communication paradigms, ensuring that learners are adequately prepared for the dynamic and technologically integrated nature of contemporary professional environments.

2.3. Curriculum theory and the question of knowledge

Curriculum theory provides a framework for understanding why integrating AI literacy into Business English is not merely a straightforward update of course content. Theoretical perspectives on curriculum futures highlight the importance of balancing structured knowledge with practical application. This approach is particularly valuable as it avoids the pitfalls of both rigid adherence to traditional knowledge and the reduction of education to mere skills acquisition. Instead, it emphasizes the importance of equipping learners with "powerful knowledge" that empowers them to interpret and engage with the world effectively [6, 15]. This perspective is crucial in ensuring that education remains relevant and impactful in a rapidly changing world.

This perspective is especially pertinent to the field of Business English. Current discussions in applied language education often focus on employability, adaptability, and the development of transferable skills [8]. While these objectives are undeniably important, there is a risk that knowledge becomes fragmented and overly focused on short-term competencies. The introduction of AI literacy exacerbates this issue, as there is a tendency to view it as a collection of skills tied to specific platforms or tools. However, such an approach is prone to becoming outdated quickly. Students require more than just temporary operational skills; they need a comprehensive understanding of how AI is transforming communication, authority, authorship, and ethical considerations [16]. This deeper understanding is essential for preparing students to navigate the complexities of an AI-driven world.

Thus, the integration of AI literacy into Business English necessitates a robust epistemic foundation. Educators must contemplate not only the skills students should acquire but also the broader understanding they should develop regarding communication in AI-mediated environments. Curriculum reform must transcend mere digital enhancements and delve into profound questions concerning the selection of knowledge and the overarching goals of pedagogy [3]. This approach ensures that education remains meaningful and equips students with the necessary tools to thrive in an increasingly digital and interconnected world.

3. Critical Challenges in Integrating AI Literacy into Business English

3.1. Conceptual ambiguity

One significant challenge is the conceptual instability of AI literacy within the context of language education. While there is a growing consensus on the importance of AI for future learning and employability, there is less agreement on the specific content that should be included in Business English curricula [10]. Educators are faced with the dilemma of whether to prioritize AI tools for language production, ethical considerations, data interpretation, or the critical evaluation of AI-generated content. This lack of conceptual clarity can lead to fragmented curriculum integration, where classroom practices may become opportunistic rather than grounded in a coherent educational philosophy. The absence of a unified approach can hinder the development of a comprehensive educational strategy, making it difficult for educators to effectively prepare students for the evolving demands of the modern workplace [12].

This conceptual ambiguity extends to the realm of assessment as well [3]. When AI literacy lacks a clear definition, it becomes challenging to establish precise learning outcomes, design appropriate tasks, or evaluate student achievement in a consistent manner [8]. As a result, educators might shy away from integrating AI literacy meaningfully into their teaching practices, opting instead for isolated activities that do not contribute to a cohesive learning experience [7]. This can lead to a superficial engagement with AI concepts, undermining the potential for students to develop a deep and nuanced understanding of AI's role in business and language education.

3.2. Pedagogical conservatism

A significant challenge faced by educational institutions is the persistence of traditional teaching methods. Despite the frequent emphasis on innovation within higher education, many Business English classrooms continue to rely heavily on lecture-based instruction, textbook exercises, and standard communication simulations. While these methods can contribute to language development, they fall short in equipping students with the necessary skills to critically engage with communication mediated by artificial intelligence [8]. The evolving landscape of communication requires a more dynamic and interactive approach to teaching, one that goes beyond conventional methods to foster critical thinking and adaptability in students [12]. This shift is essential for preparing learners to effectively navigate the complexities of AI-driven communication environments.

Developing AI literacy in students necessitates an educational approach that encourages experimentation, comparison, evaluation, questioning, and reflection. Students must be provided with opportunities to analyze AI-generated business texts, identify potential inaccuracies or rhetorical weaknesses, and compare these with human-produced communication [15]. Additionally, engaging in discussions about ethical dilemmas related to AI is crucial [13]. Achieving these educational goals is challenging through traditional, transmissive teaching models alone. However, many educational institutions continue to prioritize content coverage, standardization, and examination performance over fostering critical inquiry and encouraging curricular experimentation [19]. This focus on conventional metrics of success can hinder the development of essential skills needed for the future workplace, where AI plays an increasingly significant role.

3.3. Teacher preparedness and professional identity

A significant challenge lies in the preparedness of teachers themselves. Many educators specializing in Business English have traditionally been trained as language instructors rather than as experts in technology. This background can make it challenging for them to incorporate AI literacy into their teaching practices without sufficient professional development [1]. The expectation that they should seamlessly integrate AI concepts into their curriculum without this support places undue pressure on their existing skill set. Furthermore, if AI is framed solely as a technical issue, it risks undermining the valuable contributions that language teachers can make to curriculum reform [11, 14]. Their role is crucial in ensuring that AI literacy is not just about understanding technology but also about appreciating its impact on communication and language use [1, 8].

Business English teachers are uniquely positioned to engage with AI literacy because AI fundamentally transforms aspects of discourse, authorship, persuasion, and intercultural communication [2]. The critical question is not whether these educators should become AI specialists, but rather whether educational institutions are providing the necessary support for them to develop a robust conceptual and pedagogical framework [9]. This framework is essential for guiding students in a critical understanding of AI's role in modern communication. Without institutional support, the integration of AI into the curriculum may remain superficial, or it could be relegated to temporary technological showcases that do not provide lasting educational value. Therefore, it is imperative that institutions invest in comprehensive training and resources to empower teachers in this evolving educational landscape [15].

3.4. Misalignment with workplace realities

A further challenge lies in the persistent gap between curriculum and the workplace. Employers increasingly value graduates who can communicate effectively in digitally complex and AI-supported environments [2]. This does not simply mean using tools quickly; it involves a deeper understanding of how to assess the reliability of digital tools, adapt outputs to suit various audiences and contexts, and comprehend the ethical and organizational implications associated with the use of artificial intelligence. Graduates are expected to possess the ability to critically evaluate digital information and make

informed decisions that align with organizational goals. Furthermore, they must be adept at navigating the complexities of digital communication, which requires a nuanced understanding of both technological and human factors [14]. This comprehensive skill set is essential for thriving in modern professional environments where digital and AI technologies play a pivotal role.

However, if Business English curricula continue to focus narrowly on conventional written and spoken forms without addressing AI-mediated communication, graduates may enter the workplace underprepared. The curriculum may claim relevance while failing to address the very conditions under which professional communication now occurs [8]. This is a particularly serious issue for programs that present employability as a core educational goal. It is crucial for educational institutions to integrate AI-related communication skills into their curricula to ensure that graduates are equipped to meet the demands of contemporary workplaces [19]. By doing so, they can enhance the employability of their students, ensuring that they are not only proficient in traditional communication methods but also capable of leveraging advanced technologies to enhance their professional interactions and contributions [18].

4. A Reconceptualised Framework for Curriculum Transformation

4.1. Epistemic restructuring

The initial aspect of reform focuses on the epistemic dimension. It is imperative that Business English curricula undergo a comprehensive redesign to integrate AI literacy seamlessly into the core knowledge structure of the course. This integration should not be treated as an optional or supplementary topic but as a fundamental component of the curriculum. Students should be encouraged to explore critical questions, such as the impact of AI on authorship, the influence of automated systems on genre conventions, and the negotiation of communicative authority in contexts where texts are machine-assisted [1]. By addressing these questions, the curriculum shifts its focus from merely achieving procedural competence to fostering a deeper conceptual understanding. This approach ensures that students are not only equipped with practical skills but also possess a nuanced comprehension of the evolving landscape of communication in the digital age. Such a transformation is essential for preparing students to navigate and contribute effectively to a world increasingly shaped by artificial intelligence.

4.2. Pedagogical innovation

The second dimension focuses on pedagogical strategies. AI literacy should be imparted through engaging, inquiry-oriented, and practice-rich learning activities [5]. For instance, students can engage in analyzing AI-generated emails to assess their tone and accuracy, which enhances their critical thinking skills. Additionally, revising chatbot-produced customer responses for intercultural appropriateness allows students to understand and appreciate diverse cultural contexts [1]. Evaluating the persuasiveness of machine-assisted presentations further develops their analytical abilities. These activities effectively integrate language learning with critical analysis, practical application, and reflective thinking. Project-based and task-based learning methodologies are particularly effective as they emphasize problem-solving and contextual decision-making, fostering a deeper understanding of AI applications in real-world scenarios.

4.3. Ethical and critical orientation

A third dimension is ethical. The integration of artificial intelligence in communication introduces significant questions regarding bias, plagiarism, transparency, privacy, and responsibility. It is imperative that Business English curricula incorporate comprehensive discussions on the appropriate contexts and methods for AI utilization. These discussions should address the potential risks associated with AI and emphasize the importance of maintaining accountability for outputs that communicators did not entirely produce themselves. This ethical orientation is crucial to ensure that AI literacy is not merely driven by market demands but is also educationally meaningful [11]. By

fostering a deep understanding of these ethical considerations, educators can prepare students to navigate the complexities of AI in communication responsibly and effectively [11].

4.4. Socio-institutional collaboration

Finally, the transformation of curricula necessitates a collaborative effort between educational institutions and industry partners. It is crucial for universities to avoid redesigning Business English programs in isolation from the evolving demands of the workplace [6]. Engaging in dialogue with employers, curriculum developers, and stakeholders involved in digital policy can ensure that courses are aligned with actual communicative practices rather than merely following short-term trends. Furthermore, educational institutions must provide adequate training, allocate sufficient time, and offer curricular flexibility to enable educators to participate actively in meaningful and effective reform processes. This collaborative approach not only enhances the relevance of educational programs but also ensures that they are adaptable to the dynamic nature of the global business environment. By fostering such partnerships, institutions can better prepare students for the challenges they will face in their professional careers, thereby enhancing their employability and success in the workforce.

5. Discussion

The integration of AI literacy into Business English should not be seen merely as a technological enhancement. Instead, it represents a significant educational challenge that involves rethinking language curricula in the context of communication being transformed by digital systems. This transformation necessitates moving beyond the traditional view that language teaching is solely about linguistic competence or even general communication skills [18]. In environments mediated by artificial intelligence, communication encompasses the evaluation of generated content, the negotiation of human-machine collaboration, and an understanding of how technologies influence meaning and power dynamics. This broader perspective requires educators to consider the implications of AI on language and communication, ensuring that students are equipped with the skills to critically engage with these technologies and understand their impact on professional and personal interactions.

This is why an approach focused solely on instrumental skills is inadequate. If universities address AI by merely teaching students to use tools more efficiently, they risk perpetuating a narrow focus on employability that emphasizes short-term productivity over the development of critical thinking skills [4]. While such an approach may seem practical, it lacks educational depth. It leaves students susceptible to technological dependency, uncritical acceptance of AI-generated outputs, and a limited understanding of the evolving nature of communication practices. A more comprehensive educational strategy is needed, one that fosters critical engagement with technology and prepares students to navigate the complexities of modern communication landscapes.

A more robust curriculum response would integrate AI literacy within a broader educational framework. Business English can serve as a platform where students not only learn to communicate effectively in professional settings but also critically examine the conditions under which professional communication now takes place. In this context, the integration of AI literacy is not a diversion from language education; rather, it is becoming central to the essence of what contemporary language education must encompass [7, 15]. By embedding AI literacy into the curriculum, educators can ensure that students are prepared to engage with the challenges and opportunities presented by AI in professional communication, fostering a deeper understanding of the interplay between technology and language.

6. Conclusion

This paper has argued that integrating AI literacy into the Business English curriculum is both essential and conceptually challenging. The issue confronting higher

education is not merely the absence of AI topics in current courses, but that many curricula are still based on outdated assumptions about communication, knowledge, and employability. Through a critical examination of literature in AI literacy, English for Specific Purposes (ESP), and curriculum theory, the study identified four major challenges: conceptual ambiguity, pedagogical conservatism, limited teacher preparedness, and misalignment with workplace realities. These challenges underscore the need for a comprehensive overhaul of educational strategies to better align with the evolving demands of the modern workforce, where AI plays an increasingly pivotal role. Addressing these challenges requires a shift in educational paradigms to foster a more dynamic and relevant learning environment.

In response, the paper proposed a reconceptualized framework based on epistemic restructuring, pedagogical innovation, ethical orientation, and socio-institutional collaboration. Theoretically, this framework contributes to ongoing debates by demonstrating that AI literacy in Business English should be perceived not as a mere technical addition but as a transformative element of the curriculum. Practically, it suggests that educators should redesign course content, teaching activities, and assessment practices to more explicitly and critically reflect AI-mediated communication. This approach encourages educators to move beyond traditional methods and embrace innovative strategies that incorporate AI's complexities, ensuring that students are better prepared for the challenges of the digital age. By fostering critical thinking and adaptability, this framework aims to equip students with the skills necessary to navigate and succeed in AI-enhanced professional environments.

Compared with more traditional Business English approaches, this perspective offers a broader and more future-oriented understanding of communicative competence. Its advantage lies in its responsiveness to contemporary workplace changes and its emphasis on critical engagement rather than passive adaptation. However, the framework also faces limitations. As a conceptual paper, it does not provide empirical classroom evidence, and future research should investigate how students and teachers respond to AI-integrated curriculum design in specific educational contexts. Further studies may also examine textbook representation, assessment models, and discipline-specific differences in AI literacy development. These investigations are crucial for refining the framework and ensuring its practical applicability across diverse educational settings. By addressing these gaps, future research can contribute to a more nuanced understanding of how AI literacy can be effectively integrated into Business English curricula.

Nevertheless, this study suggests that meaningful Business English reform can no longer ignore AI. If higher education aims to prepare students for communication in a rapidly changing world, then AI literacy must become part of the curriculum's core intellectual and pedagogical agenda. The integration of AI literacy is not just an option but a necessity for equipping students with the competencies required to thrive in an AI-driven global economy. As educational institutions strive to remain relevant and effective, they must prioritize the development of curricula that reflect the realities of the digital age, ensuring that students are not only aware of AI's impact but are also capable of leveraging its potential to enhance their professional capabilities. This forward-thinking approach will help bridge the gap between academic preparation and real-world application, ultimately fostering a generation of learners who are adept at navigating the complexities of modern communication landscapes.

References

1. H. Basturkmen, *Developing courses in English for specific purposes*. Springer, 2015.
2. S. Evans, "Designing tasks for the business English classroom," *ELT Journal*, vol. 67, no. 3, pp. 281-293, 2013.
3. O. Zawacki-Richter, V. I. Marín, M. Bond, and F. Gouverneur, "Systematic review of research on artificial intelligence applications in higher education—where are the educators?," *International Journal of Educational Technology in Higher Education*, vol. 16, no. 1, p. 39, 2019.
4. D. D. Belcher, *English for specific purposes in theory and practice*, 2009.
5. N. Selwyn, *Should robots replace teachers?: AI and the future of education*. John Wiley & Sons, 2019.

6. K. Hyland, "English for specific purposes: Some influences and impacts," in *Second Handbook of English Language Teaching*, Cham: Springer International Publishing, 2019, pp. 337-353.
7. M. Young and J. Muller, *Curriculum and the specialization of knowledge: Studies in the sociology of education*. Routledge, 2015.
8. R. Luckin and W. Holmes, *Intelligence unleashed: An argument for AI in education*, 2016.
9. D. Long and B. Magerko, "What is AI literacy? Competencies and design considerations," in *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 2020, pp. 1-16.
10. M. Cukurova and F. Miao, *AI competency framework for teachers*. UNESCO Publishing, 2024.
11. B. Williamson, *Big data in education: The digital future of learning, policy and practice*, 2017.
12. B. Tomlinson, "Materials development for language learning and teaching," *Language Teaching*, vol. 45, no. 2, pp. 143-179, 2012.
13. J. W. Thomas, *A review of research on project-based learning*, 2000.
14. M. Prince, "Does active learning work? A review of the research," *Journal of Engineering Education*, vol. 93, no. 3, pp. 223-231, 2004.
15. W. Holmes, M. Bialik, and C. Fadel, *Artificial intelligence in education promises and implications for teaching and learning*. Center for Curriculum Redesign, 2019.
16. M. Taguma and M. Barrera, *OECD future of education and skills 2030: Curriculum analysis*, 2019.
17. C. A. Taylor and A. Bayley, Eds., *Posthumanism and higher education: Reimagining pedagogy, practice and research*. Springer, 2019.
18. T. Sari, F. Nayir, and A. Bozkurt, "Reimagining education: Bridging artificial intelligence, transhumanism, and critical pedagogy," *Journal of Educational Technology and Online Learning*, vol. 7, no. 1, pp. 102-115, 2024.
19. R. Luckin, "Nurturing human intelligence in the age of AI: rethinking education for the future," *Development and Learning in Organizations: An International Journal*, vol. 39, no. 1, pp. 1-4, 2025.

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