IRAQI Academic Scientific Journals
العراقية المجلات الأكاديمية العلمية
University of Kut Journal for Humanitarian Science
ISSN (E): 2707 – 5648 II ISSN (P): 2707 – 563x
www.kutcollegejournal1.alkutcollege.edu.iq
k.u.c.j.hum@alkutcollege.edu.iq
Special Issue for the Researches of the 6th Int. Sci. Conf. for Creativity for 16 -17 April 2025

AI's Role in Developing Strategies that enhance Academic and Job Performance through Effective AI Integration and Lifelong Learning

Assist. Prof. Dr. Sura Abbas Obaid [1]

Abstract

In today's fast-paced world, staying ahead in your career and personal growth is more crucial than ever. The good news? Artificial Intelligence (AI) is revolutionizing how we approach lifelong learning and skill development

Artificial Intelligence (AI) is fundamentally changing how we approach education and skill development. In a world where technology evolves rapidly and job markets require continuous adaptation, lifelong learning—an ongoing process of acquiring new knowledge and skills—is crucial. AI offers new tools to make this process more personalized, efficient, and accessible for all learners.

While AI's potential for supporting vulnerable groups, such as individuals with basic skills gaps or immigrants, is significant, its impact stretches much further. From enhancing workplace learning environments to helping professionals stay competitive in their fields, AI is driving a revolution in lifelong learning across various contexts. This article explores AI's role in diverse scenarios, including for vulnerable groups, corporate environments, and continuous upskilling efforts.

Keywords: academic performance, AI learning, individual impact, job performance, knowledge application

Affiliation of Author
[1] College of Medicine, University of Babylon, Iraq, Babylon, Al Hilla, 51001

[1] sura.alayez@uobabylon.edu.iq

[1] **Corresponding Author**

Paper Info.
Published: Oct. 2025

دور الذكاء الاصطناعي في تطوير استراتيجيات تعزز الأداء الأكاديمي والوظيفي من خلال التكامل الفعّال للذكاء الاصطناعي والتعلم مدى الحياة

اسم الباحث الاول [1] **ا.م.د. سرى عباس عبيد**

المستخلص

في عالمنا سريع التغير، أصبح التفوق في الحياة المهنية والتنمية الشخصية أكثر أهمية من أي وقت مضى. والخبر السار هو أن الذكاء الاصطناعي يُحدث ثورة في كيفية تعاملنا مع التعلم مدى الحياة وتطوير المهارات.

يغيّر الذكاء الاصطناعي (AI) جذريًا الطريقة التي نتعامل بها مع التعليم واكتساب المهارات. ففي عالم تتطور فيه التكنولوجيا بسرعة، وتتطلب أسواق العمل تكيفًا مستمرًا، يصبح التعلم مدى الحياة—أي العملية المستمرة لاكتساب المعرفة والمهارات الجديدة—أمرًا ضروريًا. يوفر الذكاء الاصطناعي أدوات جديدة تجعل هذه العملية أكثر تخصيصًا وكفاءة وإتاحة لجميع المتعلمين.

وبينما يُظهر الذكاء الاصطناعي إمكانات كبيرة في دعم الفئات الضعيفة، مثل الأفراد الذين يعانون من فجوات في المهارات الأساسية أو المهاجرين، فإن تأثيره يمتد إلى ما هو أبعد من ذلك. فمن تعزيز بيئات التعلم في أماكن العمل إلى مساعدة المهنيين في الحفاظ على قدرتهم التنافسية، يقود الذكاء الاصطناعي ثورة في التعلم مدى الحياة عبر مختلف السياقات. تستكشف هذه المقالة دور الذكاء الاصطناعي في مجموعة من السيناريوهات، بما في ذلك دعم الفئات الضعيفة، وبيئات الشركات، وجهود التطوير المهني المستمر

الكلمات المفتاحية: الأداء الأكاديمي، التعلم بالذكاء الاصطناعي، التأثير الفردي، الأداء الوظيفي، تطبيق المعرفة

انتساب الباحثين
[1] كلية الطب، جامعة بابل، العراق، بابل، الحله، 51001

[1] sura.alayez@uobabylon.edu.iq

[1] **المؤلف المراسل**

معلومات البحث
تأريخ النشر: تشرين الاول 2025

Introduction

The widespread integration of artificial intelligence (AI) technologies, such as generative AI tools like ChatGPT, in education and workplaces requires a clear understanding of the factors that influence their adoption and effectiveness. This study explores how the ease of

using AI tools, the ability to apply knowledge gained from them, and users' confidence in learning with AI impact individuals' performance and frequency of use. We also examine how these factors affect academic success and job performance among adults engaged in lifelong learning. When AI tools are easy to use, individuals experience greater benefits and are more likely to use them regularly. Applying knowledge from AI tools enhances both personal performance and usage frequency. Additionally, having confidence in one's ability to learn with AI leads to significant improvements in personal outcomes and an increased use of AI tools. These findings highlight the importance of designing user-friendly AI technologies, promoting the practical application of AI-generated knowledge, and building users' confidence to maximize the benefits of AI. Educators, policymakers, and AI developers can use these insights to develop strategies that enhance academic and job performance through effective AI integration. Future research should consider other influencing factors and employ longitudinal studies to further validate these findings.

Items of Research

1.1 AI's Role in Supporting Lifelong Learning Across Different Contexts Enhancing Workplace Learning and Upskilling: In today's fast-changing job market, continuous learning has become vital for employees at all levels. AI-driven platforms like Degreed and LinkedIn Learning allow businesses to offer personalized training paths that meet the needs of individual workers. These platforms assess employees' current skills, suggest tailored training opportunities, and track their progress in real time. This helps companies upskill or reskill their workforce efficiently, which is particularly important in industries like technology, healthcare, and manufacturing where skills requirements evolve rapidly.

SkillLab, for instance, uses AI to match employees' existing skills with available learning opportunities, helping workers stay competitive in their fields. This is especially valuable for employees who may not have formal qualifications but possess practical experience. Through AI-driven solutions, businesses can ensure that their employees remain agile and capable of adapting to new roles, technologies, and market conditions.

Just-in-Time Learning in Corporate Settings: AI is transforming on-the-job learning by integrating real-time assistance into daily workflows. AI-powered virtual tutors and chatbots provide employees with instant feedback and guidance, helping them resolve technical issues or learn new processes without interrupting their work. This kind of just-in-time learning ensures that employees can continuously improve their skills as they perform their tasks.

For example, companies like Vodafone use AI-driven platforms that allow workers to seek help with specific tasks or identify resources for quick learning, fostering a continuous learning environment. This approach not only boosts productivity but also helps employees feel more empowered in their roles, as they can upskill without needing to step away for formal training sessions.

1.2 AI for Vulnerable Groups in Lifelong Learning

Supporting Learners with Basic Skills Gaps: Many adults continue to struggle with foundational skills like literacy and numeracy. AI can provide personalized, step-by-step guidance to help them improve. Tools like Jobs offer AI-driven career

coaching that adapts to the individual's literacy level, guiding them through job applications and interview preparation. Similarly, platforms like Iris.ai simplify complex texts to make learning more accessible, allowing individuals to engage with content suited to their level of comprehension.

Assisting Immigrants and Refugees: Language barriers are a major obstacle for immigrants and refugees seeking to integrate into new societies. AI-powered language learning apps, such as Babbel or Duolingo, provide personalized lessons tailored to the learner's level. These apps offer real-time feedback and make learning more flexible and accessible for people who may not have access to traditional classroom settings. By providing tools to acquire language skills quickly, AI can play a crucial role in social and professional integration for immigrant communities.

1.3 Addressing the Risks of Exclusion in AI-Driven Learning:

While AI has immense potential, it is not without risks, particularly in terms of digital exclusion. Individuals lacking access to technology or digital literacy may find it difficult to engage with AI-driven learning platforms. ICTskills4All, for example, is an initiative that provides digital literacy training for older adults, ensuring they can participate in the digital world. By incorporating AI to assess individual progress and offer tailored learning pathways, the initiative ensures older adults develop the digital skills they need for everyday tasks and continuous learning. [Ceschi,2021: 510]

Another concern is bias in AI algorithms. If AI tools are not designed inclusively, they may perpetuate existing inequalities by reflecting biases in the data they are trained on. Developers must ensure that AI systems are fair and represent diverse user groups to avoid further marginalizing vulnerable populations.

2.1. Education across Lifespan

Education across the lifespan, often referred to as lifelong learning, encompasses all learning activities undertaken throughout life for personal or professional development. This concept is crucial in a world characterized by rapid social, economic, and technological changes, which demand continuous adaptation and skills enhancement. [Algic ,2024:124]

The concept of lifelong learning is rooted in the belief that education does not stop after formal schooling but continues through one's entire life . This approach to education emphasizes the need for continuous personal and professional development in response to evolving societal demands. Lifelong learning is considered essential for fostering adaptability, resilience, and sustained employability in a knowledge-based economy [Cervero,2013:173].

Several educational frameworks and policies have been developed to promote lifelong learning. The European Commission, for instance, highlights the importance of lifelong learning in achieving social inclusion, active citizenship, and personal development . Similarly, UNESCO's Education for Sustainable Development (ESD) emphasizes the need for educational systems that support learning from childhood through adulthood, ensuring that individuals can acquire the knowledge, skills, attitudes, and values necessary to contribute to sustainable development [Chaudhry,2022:159].

Intergenerational learning is a significant aspect of lifelong education, involving the reciprocal

exchange of knowledge and skills between different generations [ibid :160]. This approach not only enhances learning experiences but also fosters social cohesion and mutual understanding among different age groups. Studies have shown that intergenerational learning can lead to improved educational outcomes and greater community engagement . For example, older adults can share their experiences and wisdom with younger generations, while younger individuals can introduce new technologies and modern practices to older learners.

Despite its benefits, lifelong learning faces several challenges and barriers. Accessibility to learning opportunities, financial constraints, and lack of motivation or awareness are significant hurdles. Moreover, the traditional education system often does not cater to adult learners who require flexible and tailored learning solutions [38]. To address these issues, educational institutions and policymakers must develop inclusive strategies that make lifelong learning more accessible and relevant to all age groups. [Ceschi,2021: 475]

The advent of digital technologies has transformed lifelong learning, making it more accessible and flexible. Online learning platforms, Massive Open Online Courses (MOOCs), and digital resources enable individuals to learn at their own pace and convenience. These technologies have democratized education, providing opportunities for continuous learning beyond geographical and temporal constraints [39]. However, there is a need to ensure that these technologies are accessible to all, including those with limited digital literacy or access to technology.[Chen ,2020:35]

While the literature on lifelong learning provides a solid foundation for understanding its importance, much of the existing research lacks a nuanced examination of the integration of new technologies, particularly generative AI, in facilitating lifelong education. Prior studies primarily emphasize traditional and digital learning platforms without addressing the potential of AI to reshape learning strategies across diverse age groups. The current research aims to fill this gap by exploring how AI technologies can enhance adaptability and personalized learning in lifelong education. Moreover, while the benefits of lifelong learning are well-established, challenges such as accessibility, digital literacy, and intergenerational knowledge exchange remain underexplored in the context of AI adoption.

3.1 AI's Impact on Education

AI is increasingly seen as a transformative force in the field of education, particularly in enhancing personalized learning, increasing accessibility, and facilitating lifelong education .Its impact ranges from providing customized learning experiences to automating administrative tasks, thereby freeing up time for educators to focus on more critical pedagogical roles . AI's capabilities in adaptive learning, intelligent tutoring systems, and real-time data analytics have significantly improved how learners interact with educational content, offering tailored and accessible learning opportunities. However, while the promise of AI in education is clear, the literature highlights both the potential benefits and the limitations and challenges that need to be addressed [Rawas,2024:29].

One of the primary advantages of AI in education is its ability to personalize learning experiences, offering customized instruction that caters to the unique needs of each learner . AI-powered adaptive learning systems can continuously analyze a learner's strengths, weaknesses, and progress, thereby adjusting the curriculum to optimize learning outcomes . This personalized

feedback is crucial in lifelong education, where learners often come from diverse backgrounds with varying levels of expertise . Adaptive learning platforms can diagnose specific areas where learners struggle and automatically provide supplemental resources, thus ensuring a more efficient and targeted learning process [Pstross,2017:160].

AI also plays a significant role in bridging formal and informal education. AI-driven platforms can integrate various learning experiences, from online courses to informal tutorials, into a cohesive learning journey .

This integration allows individuals to develop skills continuously throughout their lives, thereby aligning with the principles of lifelong learning. By offering a flexible learning environment, AI enhances learners' ability to access knowledge at their own pace, irrespective of geographical and temporal constraints. [Ceschi,2021: 503]

Another impactful use of AI is through intelligent tutoring systems (ITSs), which simulate one-on-one tutoring experiences and offer personalized assistance to learners highlights the potential of ITSs in democratizing access to high-quality education. These systems can provide learners with instant feedback, answer questions in real time, and adapt their teaching strategies based on the learner's performance. This technology is especially valuable in lifelong education, where learners might need specific, individualized support that traditional classroom settings cannot always provide. ITSs can also increase engagement by using AI to create interactive, dynamic learning environments that maintain learner interest over extended periods [Davis,1989:319].

3.2. Technicality

Technicality refers to the ease with which users can understand and use technology . A higher level of technicality in generative AI tools is associated with increased user competence and satisfaction, as users find it easier to navigate and leverage these tools for various tasks. This competence and satisfaction are crucial in enhancing the perceived individual impact of AI .Moreover, when users find AI tools technically accessible, they are more likely to incorporate these tools into their daily routines, increasing overall usage. Studies support the notion that the ease of use directly correlates with higher adoption rates . Consequently, this research posits that technicality significantly influences both individual impact and usage among employees engaged in lifelong learning using AI.[Zhai,2024:14]

3.3. Knowledge Application

Knowledge application refers to the process by which individuals utilize acquired information to perform tasks effectively . When individuals apply knowledge gained through generative AI, they can significantly enhance their performance and productivity [Sohn,2020:25]. This enhancement stems from their ability to integrate new information into their work processes, leading to a greater individual impact. Furthermore, effective knowledge application facilitates more frequent use of AI tools, as individuals recognize the tangible benefits these tools offer in improving task efficiency and outcomes . The practical application of knowledge reinforces the adoption and habitual use of technology . Consequently, this research posits that knowledge application significantly influences both individual impact and usage among adults studying and working with AI in universities and workplaces. [Elfert,2019:540]

Firstly, education-related policymakers can leverage the findings of this study to develop guidelines and standards that promote the use of user-friendly AI tools in educational settings. Given the significant impact of technicality on both individual impact and usage, policymakers should advocate for the adoption of AI technologies that are easy to understand and use. They could mandate usability testing and certification for educational AI tools to ensure they meet specific ease-of-use criteria. They can help ensure that students and educators have access to AI tools that enhance learning outcomes and productivity. [Elfert,2019. pp:551-555]

Universities can also benefit from these findings by integrating AI tools into their curriculum and administrative processes. The research highlights the importance of knowledge application in improving academic performance, suggesting that universities should provide training programs that focus not only on acquiring knowledge but also on effectively applying it using AI technologies. Universities could offer workshops or courses that teach students how to use AI tools for research, problem-solving, and project management . By fostering an environment where students can practice and apply their AI skills, universities can enhance students' learning experiences and academic achievements.[Ceschi,2021. pp:476-480]

Managers in workplaces should consider implementing strategies to boost employees' self-efficacy in AI learning. The study shows that a higher self-efficacy leads to a better performance and increased usage of AI tools. Managers can achieve this by providing continuous training and support, such as personalized coaching sessions or access to online learning platforms that focus on AI competencies. A company might offer a mentorship program where experienced AI users guide new employees through the learning process .

By investing in the development of their employees' AI skills, organizations can improve overall productivity and job performance [Chaudhry,2022:160]

Educational AI developers are also key beneficiaries of this study's insights. The research underscores the importance of creating AI tools that are not only effective but also easy to use. Developers should prioritize user-centered design principles and involve end-users in the development process to ensure that the tools meet their needs and preferences. Developers could conduct regular user testing sessions and gather feedback to refine the usability of their AI applications. [Ceschi,2021: 510]

Conclusions

AI applications in education can foster interactive collaboration and facilitate content creation and curation for students and teachers alike. These tools help teachers develop content aligned with curriculum standards, ensuring that educational materials effectively meet diverse student needs. Interactive tools like virtual labs and educational games engage students, while collaborative platforms facilitate peer learning. Teachers can use these technologies and the data-driven insights they provide to personalize learning paths and offer adaptive feedback, enhancing the overall learning experience.

The widespread adoption of AI in the last few years, including its growing use in schools, has caused reactions ranging from outright banning to enthusiastic embrace. Because the tools will continue to evolve and change the way we operate in all areas of life, teachers and educational

administrators need to come to terms with several ethical considerations about AI in education

References

- Algıç, A., Yaşar, E., and Demir, M. "ChatGPT and Learning Outcomes in Tourism Education: The Role of Digital Literacy and Individualized Learning." Journal of Hospitality, Leisure, Sport & Tourism Education, vol. 34, 2024, article 100481.
- Cervero, R.M. "Professional Practice, Learning, and Continuing Education: An Integrated Perspective." From Adult Education to the Learning Society, Routledge, 2013, pp. 170–184.
- Ceschi, A., Perini, M., Scalco, A., et al. "Foster Employability and Fight Social Exclusion through the Development of Lifelong Learning (LLL) Key-Competences." European Journal of Training and Development, vol. 45, 2021, pp. 475–511.
- Chaudhry, M.A., and Kazim, E. "Artificial Intelligence in Education (AIEd): A High-Level Academic and Industry Note." AI and Ethics, vol. 2, 2022, pp. 157–165.
- .Chen, A., Liu, L., and Zhu, T. "Advancing the Democratization of Generative Artificial Intelligence in Healthcare: A Narrative Review." Journal of Hospital Management and Health Policy, vol. 8, 2024, article 12.
- Davis, F.D. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology." MIS Quarterly, vol. 13, 1989, pp. 319–340.
- Elfert, M. "Lifelong Learning in Sustainable Development Goal 4: What Does It Mean for UNESCO's Rights-Based Approach to Adult Learning and Education?" International Review of Education, vol. 65, 2019, pp. 537–556.
- Pstross, M., Corrigan, T., Knopf, R.C., et al. "The Benefits of Intergenerational Learning in Higher Education. Innovative Higher Education, vol. 42, 2017, pp. 157–171.
- Rawas, S. "ChatGPT: Empowering Lifelong Learning in the Digital Age of Higher Education." Education and Information Technologies, vol. 29, 2024, pp. 6895–6908.
- Sohn, K., and Kwon, O. "Technology Acceptance Theories and Factors Influencing Artificial Intelligence-Based Intelligent Products." Telematics and Informatics, vol. 47, 2020, article 101324.
- Zhai, Y., Zhang, L., and Yu, M. "AI in Human Resource Management: Literature Review and Research Implications." Journal of the Knowledge Economy, 2024.