

Guest editorial

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Rethinking the borders of work-based learning in a digital age: the role of industry 5.0 and artificial intelligence

Introduction

With the rise of Industry 5.0 and Artificial Intelligence (AI), the role of education has become increasingly important. Education must adapt to meet the demands of this new age, and rethinking the borders of work-based learning is an essential step in this process.

Industry 5.0 is the next step in the industrial revolution, characterized by the integration of advanced technologies such as AI, the Internet of Things (IoT), and big data. This integration is changing the way we work and the way business is done. Education must adapt to these changes to ensure that students are prepared for the workforce of the future. One way to do this is to incorporate Industry 5.0 and AI into education. By teaching students about these technologies, they can understand how they will be used in the workforce, and how to use them to their advantage. This will give them a competitive edge when entering the workforce. Additionally, it is important to focus on the practical application of these technologies in the business world. Students should be given opportunities to work on real-world projects, where they can apply the concepts they have learned in the classroom to practical situations. This will give them hands-on experience and a better understanding of how these technologies are used in the real world.

In addition, it is essential to rethink the borders of work-based learning. Traditionally, work-based learning has focused on internships and co-op programs. However, in the digital age, there are new ways to provide students with work-based learning experiences. For example, virtual internships and remote work opportunities can provide students with valuable experience without the need for physical presence. Furthermore, it is essential to foster collaboration between academia and industry to promote work-based learning in the digital age. By working together, educators and industry leaders can ensure that students are receiving relevant and practical education that prepares them for the workforce. Industry leaders can provide valuable insights into the skills and knowledge that are needed in the workforce, while educators can bring their expertise in pedagogy and curriculum development.

In conclusion, by incorporating Industry 5.0 and AI into the curriculum, providing students with hands-on experience, and rethinking the borders of work-based learning, we can ensure that students are well-equipped to navigate the digital age.

Through this special issue, we aim to reevaluate the skills that are needed in business education to meet the changing demands of the modern work environment, including new modes of education, and the integration of artificial intelligence. Additionally, we will delve into the implications of advancing technologies for employers and workplaces, and how they can be leveraged to enhance work-based learning. This special issue will provide valuable

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insights for educators, students, and industry leaders alike, as we work to prepare the next generation of professionals for success in the digital age.

Overview of authored articles in the special issue

Al Mubarak (2023) explores the concept of Industry 5.0, which is the latest industrial revolution that focuses on balancing technology and labor through the use of AI as a “smart agent” that enhances or replaces human functions. Industry 5.0 technologies also promote sustainable development by reducing energy consumption and waste products and increasing employee satisfaction. The paper also discusses the potential for human-robot collaboration through collaborative robots (Cobots), and the need to address legal, regulatory, psychological, social, and ethical issues to be ready for this type of work environment.

Razia, Awwad, and Taqui (2023) examine the impact of the Covid-19 pandemic on higher education institutions and their search for digital solutions, specifically focusing on the use of blockchain and artificial intelligence (AI) technology. The paper aims to provide a better understanding of this phenomenon and offers recommendations for how to better utilize AI technology during crises. It also notes that AI has the potential to transform higher education by replacing outdated technologies and manual procedures, but that there is still a lot of progress to be made in terms of understanding and leveraging AI technology to address business difficulties. Additionally, the paper emphasizes the importance of collaboration between academics and students to prepare future generations for an AI-infused job environment.

Alshurafat *et al.* (2023) examine the impact of technostress on auditors' acceptance of using blockchain technology. It highlights that auditors have not been adequately prepared to use blockchain technology and that the impact of technostress on auditors' acceptance has not been adequately examined. The study is valuable for accountants, auditors, and audit firm managers and provides empirical evidence on the impact of technostress on auditors' acceptance of blockchain technology.

AIDhaen (2023) discusses the evolution of the Higher Education Sector since the COVID-19 pandemic, with a focus on the need for institutions to rethink key skills to equip graduates for a sustainable future, which includes digitalization. The paper proposes a set of educational skills for the digital age towards the UN Sustainable Development Goals, aligned with competencies in line with qualification frameworks specifically for the Business and Finance Sector. It also suggests that Higher Education Institutes (HEIs) must expand teaching and learning methods to include outreach activities, engagement with society, digital transformation, and a proper infrastructure for virtual learning to maintain sustainable quality education.

Nouraldeem (2023) examines the effect of technology readiness, perceived usefulness, and perceived ease of use on adopting AI by accounting students in Lebanon. The study also investigates whether gender moderates these associations. The results show that both technology readiness and perceived usefulness have a positive impact on adopting AI, while perceived ease of use does not affect it. The study also found a gender bias that moderates the relationships between technology readiness, perceived usefulness, perceived ease of use, and adopting AI. The study suggests that accounting educators should work on enhancing the adoption of AI by adjusting the curricula of accounting programs and preparing students through training them on AI software.

Bakir and Dahlan (2023) examine the literature on leadership in Higher Education (HE) in the context of Industry 5.0 and aims to identify effective leadership qualities and decision-making strategies for designing suitable educational curricula. The authors found that Industry 5.0 has brought about new challenges for leaders in HEs, including the need to develop new skills and competencies, and the need to adapt to new technologies and digitalization. HE

leaders are also required to actively address new social challenges by preparing students for potential global crises and ensuring that students develop the skills of Industry 5.0 leaders. This requires immediate realignment of programs, dispensing with traditional quality evaluation processes, revising program outcomes, and formalizing qualification frameworks.

Billiot (2023) focuses on the use of Fink's Taxonomy of Significant Learning (TSL) to assist organizations in professional development and training in the context of Artificial Intelligence (AI). The paper provides a structure for using TSL to develop and train employees in AI and discusses the importance of analyzing situational factors and assessing employee learning. The paper provides a systematic and quality approach to convert employees from passive to active learners within advanced technological environments and discussing assessment methods to evaluate the effectiveness of learning.

Alsharah and Goura (2023) examine the effects of online learning in business education during the COVID-19 pandemic, highlighting the benefits and challenges of online learning, and providing recommendations for educators and institutions to improve the online learning experience. The study suggests that educators should adopt new teaching methods that involve interactive elements and additional support for students, and that institutions should provide a supportive environment with good infrastructure and qualified technical teams.

The five review articles provide further ideas to challenge prevailing thinking and practice in how student learning can best be supported in an AI world. The first sets out some of the challenges faced by HEIs and the second provides reflections on the impact of the pandemic. The final three review articles share practical ideas on the potential benefits of incorporating "digital badges" in HEIs, on providing supervision remotely for apprenticeships and lastly on applying project-based learning in the construction sector.

Concluding remarks

In conclusion, this special issue provides valuable insights into the use of Industry 5.0 and AI in education, how work-based learning can be adapted to meet the changing demands of the digital age, and the importance of rethinking traditional teaching methods. Emphasizing the importance of collaboration, communication, and hands-on experience, the papers also provide valuable recommendations for educators, students, and industry leaders on how to leverage these technologies to enhance teaching and learning, overcome the challenges that arise from Industry 5.0, and ensure that students are equipped with the necessary skills for success.