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THE IMPACT OF IT EVOLUTION ON INDUSTRIES AND WORKFORCE SKILLS: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Aim/Purpose	To investigate the impact of the evolution of Information Technology on global workforce skills and explore emerging approaches that address the IT talent shortage faced by diverse companies in finding skilled IT workers.
Background	This paper explores diverse approaches to bridge the skilled IT workers shortage gap, especially in the context of the widening gap following the impact of the COVID-19 pandemic. The study emphasizes the need to consistently leverage business and information technology strategies for competitive advantage.
Methodology	This study followed the systematic literature review methodology on 809 articles from ACM, IEEE Xplore, and Scopus digital libraries by utilizing an integrative mixed methods approach with topic modeling and manual content analysis.
Contribution	This paper aims to understand and describe the impact of the evolution of the IT industry on its workforce. It contributes additional evidence to our understanding of IT workforce development to support researchers and educators working towards developing effective strategies to bridge the IT talent gap.
Findings	On the one hand, the study finds that the evolution of the IT industry produces a shift in required skills and knowledge, resulting in workers needing to adapt

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	and embrace lifelong learning. On the other hand, the evolution of IT creates new opportunities for workers and results in a more globalized and interconnected workforce.
Recommendations for Practitioners	Practitioners are recommended to adapt to the shifting skills landscape, encourage lifelong learning, explore new opportunities for workers, and embrace a more globalized workforce.
Recommendations for Researchers	Researchers are encouraged to further explore the identified themes and delve into the nuances of the evolving impact of information technology on workforce skills.
Impact on Society	The findings have implications for industry growth, emphasizing the importance of aligning business and IT strategies to address the shortage of skilled IT workers on a global scale.
Future Research	Future research should focus on the continuous evolution of information technology and its impact on workforce skills, considering the identified themes as a foundation for further exploration.
Keywords	information technology, workforce skills, thematic analysis, BERTopic, globalized workforce, lifelong learning, COVID-19 impact

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Dr. Hazem Said is a Professor of Information Technology and the Director of the School of Information Technology (SoIT) at the University of Cincinnati (UC). He is a certified Project Management Professional (PMP). Dr. Said founded the UC Information Technology Solutions Center (ITSC) in 2012, where he consults with government, public, and private organizations and leads teams of professionals, as well as graduate, undergraduate, and high school students, to investigate, develop, and support a variety of information technology solutions. In addition, Dr. Said is a co-founder and co-director of the Ohio Cyber Range Institute and the Justice, Law, and Information Technology Institute. Dr. Said is the recipient of over 200 grants and contracts totaling over $30 million and has authored over 27 articles on topics related to information technology education.