Editorial

Editorial for the Special Issue "Information Technologies in Education, Research, and Innovation"

Eric C. K. Cheng [1,*] and Tianchong Wang [2]

1 Department of Curriculum and Instruction, Faculty of Education and Human Development, The Education University of Hong Kong, Hong Kong 999077, China

2 Department of Education, School of Social Sciences, Media, Film and Education, Swinburne University of Technology, Melbourne, VIC 3122, Australia; tianchongwang@swin.edu.au

* Correspondence: eckcheng@eduhk.hk

The COVID-19 pandemic has accelerated the integration of education and technology, ushering in a new era where digital tools and innovative approaches take center stage across higher education and beyond. This Special Issue presents a carefully curated collection of research papers, each providing unique insights into the multifaceted landscape of this transformative intersection. These papers illuminate the challenges and opportunities that arise from the dynamic interplay between education and technology. Below, we dive deep into their key contributions.

A notable theme of the articles in this Special Issue is the focus on personalized learning approaches. Wahjono et al. (contribution 1) highlight the significance of blended learning and the development of models tailored to individual student needs, championing adaptability in the educational process. Meanwhile, Masa'deh et al. (contribution 2) investigate the factors influencing students' inclination towards e-textbooks and the resultant impact on academic achievement, emphasizing the significance of personalized learning experiences. In order to understand student learning behaviours, AlQaheri and Panda (contribution 3) employ process discovery algorithms to predict outcomes, fostering a broader perspective on adapting teaching methodologies to cater to diverse learning behaviours and preferences. Hijón-Neira et al. (contribution 4) explore the critical role of optional formative feedback in promoting student engagement and performance in the virtual learning environment (VLE). Additionally, Shibani et al. (contribution 5) investigate the parameters that shape e-learning recommendations and their influence on students' preferences. These studies emphasize the significance of customizing educational approaches to fulfill the varied needs of students in a technology-enabled learning environment.

Another critical aspect covered is the impact of technology integration on learning. Kalaitzopoulou et al.'s (contribution 6) study investigates the impact of optional formative feedback on postgraduate students' engagement and performance in a digital design module, finding that while such feedback improved marks on specific tasks, it did not significantly enhance overall performance. The research also reveals a complex relationship between feedback-seeking behavior and factors like gender, motivation, and personality traits. Villegas-Ch, García-Ortiz, and Sanchez-Viteri (contribution 7) proposed a method to assess the inclusion of ICT in the classroom and its impact on the state of learning and performance among university students. By tracking a cohort of students over 4 years across in-person, remote, and hybrid models, their study provides valuable insights into how integrating technology affects the student experience.

The skills essential for students to thrive in the rapidly evolving landscape of *Industrial 4.0* are explored in this Special Issue. Dimos et al. (contribution 8) explore the integration of computational thinking (CT) concepts into the educational framework. They emphasize the significance of using rubrics to guide teachers and the growing relevance of CT skills in today's digital age. Borrás-Gené, Serrano-Luján, and Díez (contribution 9) highlight the

importance of digital identity and personal branding for higher education students, aligning with the broader theme of nurturing digital competencies and a compelling online presence. Additionally, Moreira-Santos, Au-Yong-Oliveira, and Palma-Moreira (contribution 10) examine Fintech adoption and its intricate relationship with technology, specifically in financial services. This study highlights how technological contexts pivotally shape decision making, aligning with the broader theme of adapting to a rapidly evolving landscape.

Challenges and issues associated with the integration of technology into education are also addressed. Essel et al. (contribution 11) investigate the prevalence of technostress and its impact on academic achievement in Ghanaian higher education. They highlight the need for strategies to mitigate technostress, cultivate digital literacy, and empower students in independent learning. Cheng and Wang (contribution 12) emphasize the paramount importance of cybersecurity in higher education institutions, offering comprehensive insights and strategic approaches to combat increasing cyber threats. Additionally, Golubev, Novikova, and Fedorchenko (contribution 13) tackle intrusion detection in cyber–physical objects, amplifying the collective understanding of digital security and risk management.

As this Special Issue demonstrates, the intersection of information technologies and education continues to be a thriving hub of innovation and discovery. Collectively, the curated papers contribute to the expanding knowledge in this realm. They offer insights for educators, researchers, policymakers, and professionals in the evolving landscape. The papers compiled here represent promising strides and yet only comprise an inkling of what is possible. To continue advancing, we need educators to explore new teaching methods, researchers to investigate effectiveness, technologists to build better tools, policymakers to enable change—and, most importantly, more collaboration across these spheres. This Special Issue provides a snapshot of progress to inspire future work. By sharing diverse insights, we hope to illuminate the potential that can be found at this exciting crossroads. We invite you to join us in advancing this important field.

List of Contributions

1. Wahjono, H.; Wiyono, B.B.; Maisyaroh; Mustiningsih. Development of Blended-Learning-Based Semester Credit System Implementation Model to Improve Learning Service. *Information* **2021**, *12*, 511. https://doi.org/10.3390/info12120511.

2. Masa'deh, R.E.; AlHadid, I.; Abu-Taieh, E.; Khwaldeh, S.; Alrowwad, A.A.; Alkhawaldeh, R.S. Factors influencing students' intention to use E-textbooks and their impact on academic achievement in Bilingual environment: An empirical study Jordan. *Information* **2022**, *13*, 233. https://doi.org/10.3390/info13050233.

3. AlQaheri, H.; Panda, M. An education process mining framework: Unveiling meaningful information for understanding students' learning behavior and improving teaching quality. *Information* **2022**, *13*, 29. https://doi.org/10.3390/info13010029.

4. Hijón-Neira, R.; Pizarro, C.; French, J.; Paredes-Barragán, P.; Duignan, M. Improving CS1 Programming Learning with Visual Execution Environments. *Information* **2023**, *14*, 579. https://doi.org/10.3390/info14100579.

5. Shibani, A.S.M.; Mohd, M.; Ghani, A.T.A.; Zakaria, M.S.; Al-Ghuribi, S.M. Identification of Critical Parameters Affecting an E-Learning Recommendation Model Using Delphi Method Based on Expert Validation. *Information* **2023**, *14*, 207. https://doi.org/10.3390/info14040207.

6. Kalaitzopoulou, E.; Matthews, P.; Mystakidis, S.; Christopoulos, A. Engagement with Optional Formative Feedback in a Portfolio-Based Digital Design Module. *Information* **2023**, *14*, 287. https://doi.org/10.3390/info14050287.

7. Villegas-Ch, W.; García-Ortiz, J.; Sanchez-Viteri, S. Proposal for the Analysis of the State of Learning in University Students with the Inclusion of ICT in the Classroom. *Information* **2022**, *13*, 391. https://doi.org/10.3390/info13080391.

8. Dimos, I.; Velaora, C.; Louvaris, K.; Kakarountas, A.; Antonarakou, A. How a Rubric Score Application Empowers Teachers' Attitudes over Computational Thinking Leverage. *Information* **2023**, *14*, 118. https://doi.org/10.3390/info14020118.

9. Borrás-Gené, O.; Serrano-Luján, L.; Díez, R.M. Professional and Academic Digital Identity Workshop for Higher Education Students. *Information* **2022**, *13*, 490. https://doi.org/10.3390/info13100490.

10. Moreira-Santos, D.; Au-Yong-Oliveira, M.; Palma-Moreira, A. Fintech Services and the Drivers of Their Implementation in Small and Medium Enterprises. *Information* **2022**, *13*, 409. https://doi.org/10.3390/info13090409.

11. Essel, H.B.; Vlachopoulos, D.; Tachie-Menson, A.; Johnson, E.E.; Ebeheakey, A.K. Technology-induced stress, sociodemographic factors, and association with academic achievement and productivity in Ghanaian higher education during the COVID-19 pandemic. *Information* **2021**, *12*, 497. https://doi.org/10.3390/info12120497.

12. Cheng, E.C.; Wang, T. Institutional strategies for cybersecurity in higher education institutions. *Information* **2022**, *13*, 192. https://doi.org/10.3390/info13040192.

13. Golubev, S.; Novikova, E.; Fedorchenko, E. Image-Based Approach to Intrusion Detection in Cyber-Physical Objects. *Information* **2022**, *13*, 553. https://doi.org/10.3390/info13120553.