Guest editorial

Challenges and opportunities of E-Learning and blended learning during COVID-19

In December 2019, our lives transformed incessantly, as a new virus – a secret and unknown enemy – named coronavirus disease 2019 (COVID-19), interrupted and disturbed the lives of people world-wide. The spread of the secret virus affected and impacted all the sectors including the education. Currently world-wide, the education sector is facing a huge impact as a result of the COVID-19, with universities forced to shift their teaching to e-learning and blended learning modes. Academics have had to adapt to this change, both by way of teaching and the assessment process. This has generated several challenges and opportunities for both academics and students.

This special issue aims to investigate, assess and examine academics' perspectives and perceptions with regard how they have handled this challenge as well as highlighting any opportunities and challenges they have experienced during this period. This new issue will add a new theoretical and practical significance to the e-learning literature review, as currently academics are facing new challenges and opportunities by changing their teaching mode from blend teaching to pure e-learning from the COVID-19. This special issue explored the following themes, namely, teaching mode, e-Learning, blended Learning and collaborative technology

The special issue is comprised of seven papers

Article 1: "Academic support under COVID-19 lockdown: what students think of online support e-tools in an ODeL course by Michael van Wyk." This paper explores student teachers' views related to the online academic support e-tools used under the COVID-19 lockdown. The Mapping a pragmatic research approach, an explanatory mixed methods design was used for the study. The new findings from this study revealed that student teachers were satisfied and experienced the academic support tools as being positively applied to their online learning. Furthermore, it is reported that student teachers preferred the discussion forum as the most appropriate academic support e-tool in the course under the COVID-19 lockdown. The new significance research implications indicate that the exploratory pragmatic study extends our knowledge of the online academic support e-tools for an ODeL context that were used under the COVID-19 lockdown. This study provides additional evidence concerning a revised academic support frame for an ODeL online learning context. This study examined only a teacher education course and could not be generalized to similar conditions as those under COVID-19 lockdown. This exploratory research has raised many questions that require further investigation. More research is required to determine the efficacy of the academic support e-tools with regard to student learning in other online courses and contexts.

Article 2: "Enhancing the Digital Capacity of EFL Programs in the Age of COVID-19: The Ecological Perspective in Japanese Higher Education by Bradley Colpitts; Michael Smith, David McCurrach." This paper examines how the COVID-19 pandemic exposed the inability of the Japanese higher education system to adapt to widespread unexpected disruption. The limited metrics available to assess Japanese higher education's response in the wake of the pandemic indicate several areas where the system needs to be strengthened. The current paper harnesses the ecological perspective to explore the procedures by which higher education in Japan can remedy extant digital shortcomings. The Leveraging Zhao and

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Frank's ecological perspective as its theoretical model, this paper proposes practical solutions to remedy deficiencies highlighted by the COVID-19 pandemic rooted in existing literature both within and outside of Japanese higher education research. The study suggests pragmatic solutions to embolden each of the three strata encompassing the educational "ecosystem": institutions, faculty and students. The paper identifies measures for emboldening institutions to become more adaptive and improve leadership capacity. At the faculty level, meanwhile, an increase in professional development opportunities and the bolstering of support systems may function to bridge an intergenerational digital divide. Finally, for students, the authors argue for mobile-assisted language learning in an effort to strengthen learner outcomes and prescribe how to integrate this method into formal IT platforms.

Article 3: "Flexible Learning with Multi-component Blended Learning Mode for Undergraduate Chemistry Courses by Chui-Man Lo, Jie Han, Emily Wong and Chin-Cheung Tang." Traditional chemistry courses usually include lectures, tutorials and laboratory sections. For a course "Advances in Organic Synthesis" at undergraduate level, it consists of advanced information in organic chemistry such as reaction mechanisms, asymmetric catalysis, retrosynthesis and applications in synthesis of natural products. This course is a difficult subject and requires deep understanding of contents. After learning this course, students should have comprehensive knowledge in advanced strategies of organic synthesis and have an ability to apply them to real cases. We would like to use this "flexible learning with multi-component blended learning mode" was implemented by us to enhance student engagement and self-motivation in their students' studies. Multi-component blended learning combines face-to-face and e-learning components with interactive Web-based components and technical experimental videos were developed. The knowledge integrated in different components provide a natural environment to link the different synthetic methods together which help students to get a better understanding of the complicated knowledge and strengthen their skills. For flipped classroom, students participated in the case studies of the organic synthesis and share their findings to other classmates in oral presentations. It was found that students' engagement and their self-motivation in learning were enhanced. The positive feedback from the students and the enhancement of their academic performance supported the value in this research. Besides, most universities in Hong Kong have suspended all face-to-face classes and conducted all teaching in online mode during the COVID-19 outbreak. As the multi-component blended learning mode of this course have already conducted for eight cohorts, we are confident that this feature can minimize the suddenly changing of learning habits for the students. As social factors and individual variations in students' learning and study mode may affect the learning outcomes, this interactive multi-component e-learning components in this special period makes students excited when they can study and digest the knowledge according to their own pace.

Article 4: "Flipped Classroom model before and during COVID-19: using technology to develop 21st century skills by Natalia Sobradiel-Sierra, Cecilia Latorre-Cosculluela, Cristina Suárez-Gálvez, Sonia Quiroga-Gómez, Raquel Lozano-Blasco, Ana Rodríguez-Martínez." Learning inside and outside the classroom requires highly effective learning designs that prepare to face the demands of a 21st century society. The confidence placed in the use of technology and other computing resources is an important form of support for the transformation toward processes of very high-quality teaching-learning based on active learning. This paper aims to present and describe a higher education experience with Flipped Learning before and during the transformation of education due to the COVID-19 pandemic. In addition, the study analyzes the effectiveness perceived by university students

of Flipped Learning for the development of competencies for the 21st century. A quantitative methodology is used in which 376 university students filled out a questionnaire after experiencing several sessions with an inverted classroom under both onsite and online instruction. the results show a high agreement among students on the benefits of or effectiveness that learning designs with Flipped Classroom have on the development of skills that will be useful for their personal and professional future.

Article 5: "Impact of Coronavirus Pandemic on the Indian Education Sector: Perspectives of Teachers on online teaching and assessments by Preeti Bhaskar, Amit Joshi and Vinay, Muddu." In India, the COVID-19 outbreak has been declared an epidemic in all its states and union territories. To combat the COVID-19, the lockdown was imposed on 25 March 2020 which has adversely affected the education system in the country. It has changed the traditional education system to the Educational technologies (EdTech) Model, where teaching and assessments are conducted online. This research aims to identify the barriers faced by teachers during online teaching and assessment in different home environment settings in India. Interpretative phenomenological analysis (IPA) of qualitative research methodology has been used in this research. The study was conducted among the teachers working in the government and private universities of Uttarakhand, India. Semi-structured in-depth interviews were conducted among 19 teachers to collect data regarding the barriers faced by them during online teaching and assessment. ATLAS.ti Version 8 was used to analyze the interview data. The findings revealed four categories of barriers that are faced by teachers in online teaching and assessments. Under home environment settings, lack of basic facilities, external distraction and family interruption during teaching and conducting assessments were major issues reported Institutional support such as the budget for purchasing advanced technologies, lack of training, lack of technical support and lack of clarity and direction were also reported under institutional support. Teachers also faced technical difficulties. The difficulties were grouped under lack of technical support, it included lack of technical infrastructure, limited awareness of online teaching platforms, security concerns. Teachers' personal problem is including lack of technical knowledge, negative attitude, course integration with technology and lack of motivation is identified as the fourth category to damper their engagement in online teaching and assessments.

Article 6: "Initial Response to COVID-19: A Mixed-Methods Analysis of Media and School Communications to Identify Pedagogical Implications for Remote Teaching by Lauren Eutsler." Immediately following the declaration of the national emergency of the COVID-19 pandemic in the United States, this study examined one month of social media, news media, school district websites' continuity plans and educational affiliate organizations, to unveil K-12 stakeholders' initial response to K-12 remote instruction. Framed by connectivism theory, we used a mixed-methods sequential explanatory design to conduct a systematic content analysis of 43,870 tweets, news media, school district websites' continuity plans and educational affiliate organizations. Initial responses focused on community lockdown procedures, sustaining education, adapting to a remote lifestyle and political tension. We revisited included tweets one week later to measure their connectedness, which revealed that educational organizations, who have the largest number of followers also have the greatest outreach and visibility.

Article 7: "Students' Adoption of E-Learning in Emergency Situation: The Case of A Vietnamese University During Covid-19" by Nguyen Ho, Subarna Sivapalan, Hiep Pham, Lan Nguyen, Anh Pham and Hung Dinh. By using a Technology Adopted Model (TAM) on survey results collected from two member schools of a Vietnamese educational institution, the study aims to uncover the key factors that affect students' acceptance of e-learning during the COVID-19 period. A bilingual questionnaire in English and Vietnamese was

delivered. It was pre-tested on 30 participants before it was finalized. The authors first reviewed the measurement model and made adjustments to the theoretical TAM model. Then the adjusted TAM was used to investigate the relationships of the constructs in the model. The results of the structural model show that computer self-efficacy (CSE) has a positive impact on perceived ease of use (PEOU). There is also a positive relationship between system interactivity (SI) and PEOU. Surprisingly, we documented that PEOU has no significant impact on students' attitudes (ATT). The results show that SI can moderately affect ATT. Finally, it is noted that the social factor (SF) directly affects the student's attitudes (ATT). This study has both theoretical and practical implications. From a theoretical perspective, the study can provide a solid framework for similar studies. From a practical perspective, this study offers implications for governments and universities in the process of adopting e-learning, given that the COVID-19 pandemic is currently in its second and more dangerous wave.

In conclusion, this special issue aims to present the teaching challenges and opportunities during the COVID-19 pandemic. This special issue presented several practical studies from world-wide of their teaching during the pandemic. Finally, this special issue will be beneficial for the education sector, including universities, schools and colleagues, to assist the academics, researchers, education managers and others conduct their learning and teaching. Finally, we hope that you, your families and communities are keeping safe and well amidst the public health concerns and pandemic emergency worldwide. We understand and are undergoing ourselves, the rapid adaptation and transition to remote online and distance forms of education now required in many settings.

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