**Collaborative Online Learning using Wikis and Padlet in undergraduate Bioscience**

Background and initiative: Online learning has gained popularity in higher education and deemed highly important under the current pandemic crisis. Positive pedagogical outcomes of online learning depend extensively on successful online learning communities. Central to this concept of an online learning community, therefore, is collaborative learning. According to Bosch et al. (2019), collaborative learning is a pedagogical approach that involves groups of learners working together towards a common goal and involves a transformative digital space where critical and complex learning skills can be developed. Additionally, popular social Web 2.0 technologies such as wikis and padlet serve as mediators for collaborative online learning (Kear, Jones, Holden, & Curcher, 2016; Korucu & Cakir, 2018). The effectiveness of collaborative tools can vary across face-to-face and online courses with more challenges encountered in the online courses (Thorpe, 2002). Knowing the significance of collaboration in online education, it is therefore critical to identify what works and what does not work in the online space. The approaches to collaboration in online space may need different approaches and a deeper insight is essential to understand the functionality.

Aims. The aim of this study was to investigate students’ perspectives on their collaborative online learning experience using digital tools such as padlet and wiki.

Methods of evaluative data collection and analysis: A pre and post survey was conducted to address the research problem. Perceptions were gathered across six main fronts: content knowledge, self-efficacy, student interaction, higher-order thinking skills, group dynamics, and meta-cognition. Furthermore, academic grades were compared following the use of padlet and wiki.

Evidence of outcomes and effectiveness: Results of the study revealed significant differences in favour of padlet indicating major change in perceptions after use in comparison to wiki. Additionally, results indicated that processes involved in collaborative practices using wiki can significantly predict the exam scores.

Discussion. The findings of the study reveal digital tools such as padlet and wiki have the potential to influence positive pedagogical outcomes through learning processes that are involved in enhancing knowledge, self-efficacy, higher-order thinking skills and meta-cognition.

Relevance to the conference theme: This study relates to the theme ‘Teaching, Learning and Student Experience’ as collaborative learning using digital tools can reap positive pedagogical outcomes for online education.

References:

Bosch, C., Mentz, E., & Reitsma, G. M. (2019). Integrating cooperative learning into the combined blended learning design model: Implications for students' intrinsic motivation. *International Journal of Mobile and Blended Learning (IJMBL), 11*(1), 58-73. [https://doi.org/10.4018/IJMBL.2019010105](https://protect-au.mimecast.com/s/YLryCBNqXAiJNppSz97Tv?domain=doi.org)

Kear, K., Jones, A., Holden, G., & Curcher, M. (2016). Social technologies for online learning: theoretical and contextual issues. *Open Learning, 31*(1), 42-53. doi:10.1080/02680513.2016.1140570

Korucu, A. T., & Cakir, H. (2018). The Effect of Dynamic Web Technologies on Student Academic Achievement in Problem-Based Collaborative Learning Environment. *Malaysian Online Journal of Educational Technology, 6*(1), 92-108

Thorpe, M. (2002). Rethinking Learner Support: the challenge of collaborative online learning. *Open Learning, 17*(2), 105-119. doi:10.1080/02680510220146887a