

DIGITAL LITERACY SKILLS, STUDENT INTERACTIVITY AND ACADEMIC PERFORMANCE IN STEM BLENDED COURSES

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BACKGROUND

The successful implementation of Blended Learning (BL) – an amalgamation of face-to-face and online learning, is impacted by students' digital literacy (DL), self-efficacy (SE), and online learning self-concept (OLSC) (Bauer, 2005; Ng, 2012; Shen, Cho, Tsai & Marra, 2013; Mohammadyari & Singh, 2015). However, there is limited literature studying their effects on student engagement, specifically in a STEM blended course.

AIMS

To explore UQ STEM (i.e. biology, chemistry, mathematics, physics and statistics) students enrolled in first-year courses' perceived level of DL and how this relates to their interactions with Blackboard Learn and EdgeX, and academic performance.

METHODS

Students' perceived level of DL, SE and OLSC were collated via survey (n = 282). K-means cluster analysis grouped student responses, and learning analytics were applied to explore relationships to academic performance.

RESULTS

Students were sorted into two categories based upon their survey responses: high (n = 106) and low-level (n = 176) DL. Cluster analysis revealed students with a high-level of DL also scored significantly higher ($p < 0.05$) in the SE and OLSC scales compared to those with a low-level of DL.

CONCLUSIONS

Student SE and OLSC is linked to their level of DL, and student perceptions can be contextualized through learning analytics to help predict performance.

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