Using mathematical model and empirical study to compare the face-to-face interaction between the physical and cyber environments

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Abstract

Interaction is an important factor for effective teaching and learning and Face-to-Face (F2F) interaction is found to be a crucial element in it. Advancements in communication technologies and ICT tools now allow us to have cyber synchronous interactions with audio/video, document and whiteboard sharing that occur in real-time with similar levels of fidelity as in the physical F2F environment. However, many people still challenge the quality of online courses due to the fact that there is no F2F interaction as in traditional physical classroom. Therefore, it is imperative that we understand the features of cyber synchronous F2F environment compared with the physical F2F environment. This research uses transactional distance theory from the viewpoint of visual distance to compare the difference of physical F2F and cyber synchronous F2F environments. We use a mathematical model to formulate the transactional distance in comparing the interaction distance of physical F2F and cyber synchronous F2F. Transaction distance is then used to analyze the communication gap between the learner and the instructor, content, and other learners.

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