

Collaborative Virtual Reality for Surveying Education

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SUMMARY

Immersive technologies have experienced rapid advancement in recent years, and they have experienced widespread dissemination and implementation in several disciplines including engineering. These virtual reality implementations demonstrate a capability to support education. However, implementations often lack connections with theoretical pedagogical structures, leading to suboptimal results. This paper presents virtual reality implementations following two different pedagogical frameworks, namely experiential learning and situated cognition / collaborative learning. In the former case students engage in a virtual experience and learn by doing, while in the latter students learn through communication and deriving solutions as a team. It is widely accepted that teamwork and collaboration are increasingly important skills in engineering. This paper demonstrates an example of virtual reality labs in surveying engineering that follow a situated cognition framework. The situated cognition labs are compared with virtual reality labs that follow an experiential learning approach. The paper presents the first assessment results of collaborative learning and evaluate the role of collaborative virtual reality to enhance student learning and support surveying education.

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