Thesis Abstract

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Thesis Title

A Design Framework to Integrate Immersive Media Technologies for Collaborative Fieldwork Learning in Higher Education

Thesis Summary

The advancements in immersive media and its mainstream access brings unprecedented opportunities for learning. This research proposes a design framework for the integration of immersive media technologies with the objective of collaborative fieldwork learning, in higher education.

This study initiated by working closely together with university professors, to understand their needs regarding fieldwork education. This enabled the identification of the learning outcomes expected from collaborative fieldwork programs in higher education. The five learning steps identified were observation, interpretation, substantiation, presentation, and storytelling. Each learning step contains related field activities and learning objectives, which are part of the fieldwork education curriculum.

It also focused on understanding collaborative objectives from those professors, an important component for the design of fieldwork learning activities. Those were divided in three categories: one sees for all, together we see more and better, and different eyes, different views. By connecting the learning steps of fieldwork learning and the collaborative fieldwork approach, the focus of this research was then on developing the proposed design framework. The framework has the objective of bridging communication between fieldwork designers and technologists, determine the collaborative focus of the fieldwork activities with immersive media, as well as frame the immersive media experience in regard to the fieldwork learning steps. This way, its final objective is the integration of immersive media technologies on fieldwork activities and programs.

Different integrations were conducted as part of the framework validation, with distinct focuses and objectives regarding the impact of immersive media on fieldwork learning. The activities created by those integration covered all three collaborative approaches and all five fieldwork learning steps, and took different varieties: on the field, where students utilized technologies such as 360 cameras while doing fieldwork; and as immersive media experiences, where the students utilized virtual, interactive immersive environments such as virtual maps and virtual reality to participate in activities related to their fieldwork programs.

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The integration results highlight the importance of understanding the needs and conditions of fieldwork education for successful integration of the immersive media technologies, as well as emphasize on important aspects to be considered for other fieldwork designers or technologists. As such, the main outputs of this research are: 1) Collaborative approach and Learning steps for collaborative fieldwork in the higher education contexts; 2) Design Framework for the integration of immersive media technologies on collaborative fieldwork in higher education.