Notice of the Final Oral Examination
for the Degree of Doctor of Philosophy

of

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MIT (The Evergreen State College, 2000)
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“Mobile Interpretive Apps as Educational Mediating Tools in Science Education: Participant-Based Digital Design in Natural History and Science Museums”

Department of Curriculum and Instruction

Tuesday, June 26th, 2018
8:00 a.m.
MacLaurin Building
Room A341

Supervisory Committee:
Dr. David Blades, Department of Curriculum and Instruction, University of Victoria (Supervisor)
Dr. Tim Pelton, Department of Curriculum and Instruction, UVic (Member)
Dr. Ulrike Stege, Department of Computer Science, UVic (Outside Member)

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Dr. Erminia Pedretti, Department of Curriculum, Teaching and Learning, OISE/University of Toronto

Chair of Oral Examination:
Dr. Myer Horowitz, Department of Educational Psychology and Leadership Studies, UVic

Dr. Stephen Evans, Acting Dean, Faculty of Graduate Studies
Abstract

The use of mobile and social learning media for K-12 students continues to rapidly increase in both formal and informal learning environments. While many educational apps have been developed for adult visitors to museums and science and technology centres (STCs), very few programs exist that are specifically designed to meet the unique learning and interpretive needs of elementary students in these learning environments. This dissertation explores the inclusion and development of children’s ideas and digitally mediated interpretive activities for peers within the exhibits of the natural history gallery at the Royal British Columbia Museum (RBCM) in Victoria, British Columbia. In this triangulated case study, thirteen Grade 4 and 5 students, five museum interpreters, and six elementary teachers worked in teams to design educational apps for their peers using experimental software specifically designed for this project. Five design teams composed of 2-3 students, one teacher, and a museum educator designed a wide variety of science activities for the natural history gallery at the RBCM. The results of triangulation indicate that mobile interpretive apps acted as imperfect but important educational mediating tools for the participants in this study. While elementary students were successful in creating mobile apps for the natural history gallery, issues around the use of older iPad 2 systems in combination with the complexity of the experimental software posed significant challenges for the participants in this study. The dissertation concludes with an examination of how informal science institutions can move beyond educational interactivity to more participatory frameworks that include the ideas and voices of young people within mobile learning and educational app development at natural history museums and STCs.