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

of

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MA (Charles University of Prague, 1989)

“Filmmaking: A New Pedagogical Method to Explore Students’ View of Nature of Science.”

Department of Curriculum and Instruction

Thursday, August 27, 2015
10:00AM
David Turpin Building
Room A136

Supervisory Committee:
Dr. David Blades, Department of Curriculum and Inspection, University of Victoria (Supervisor)
Dr. Tood Milford, Department of Curriculum and Inspection, UVic (Member)
Dr. Warwick Dobson, Theatre Department, UVic (Outside Member)
Dr. Mijung Kim, Faculty of Education, University of Alberta

External Examiner:
Dr. Jerine Pegg, Elementary Education, University of Alberta

Chair of Oral Examination:
Dr. Jentery Sayers, Department of English, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies
Abstract

This dissertation examines the nature, scope, and significance of a basic philosophical and pedagogical approach to the teaching of views on nature of science (VNOS) to high school students. Educational approaches based on teaching ‘correct’ VNOS continue to be dominated by the epistemology of logical empiricism and, as I will point out, these approaches are inadequate to address the issues of VNOS. I assert and the findings presented in this dissertation offer evidence that students' VNOS are dynamic and context-based.

In this research I used filmmaking to explore students' VNOS. High school students, supported by a professional filmmaking crew, completed a short film entitled, The Shadows of Hope; this film explores the use of scientific knowledge in understanding everyday life problems. The filmmaking environment introduced simultaneously a number of contexts in which students' VNOS were concurrently collected using mixed methods methodology. The results show that contexts sway students' VNOS and generate a variety of the VNOS for each student. Evidence shows that there is a common, theme-based pattern to individual students' set of VNOS. The variety of expressed VNOS seemed natural to the students, with no registered discomfort. However, in this study a contrast between students' VNOS and their 'school based' understanding of science also became apparent. This is evidence that cognitive dissonance is not sufficient to explain the full spectrum of ways in which students learn, deepen knowledge and arrive to conceptual change. I assert that including cognitive contextual expansion in our understanding of conceptual change is essential to provide a framework that allows to integrate cognitive diversity into the theory of learning, reflecting a perhaps more natural way human mind works.

The project’s findings offer evidence that students’ VNOS deepened and expanded through filmmaking; students arrived to a more examined and mature VNOS while enjoying the activity of making a film. There is evidence that cooperation with a professional team provided students with a feeling of respect and pride. Filmmaking offers a robust way of learning, based on collaborative work that enlivens a large number of learning-enhancing activities. Additional resources and a Brief Guide For Teachers are added to this text to support teachers in adopting filmmaking as a unique pedagogical method.