INVESTIGATING SCIENCE TEACHER KNOWLEDGE OF LEARNERS AND SEQUENCE OF INSTRUCTION IN AN ALTERNATIVE CERTIFICATION PROGRAM

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ABSTRACT

Alternative certification programs (ACPs) have been designed to address the teacher shortage and still meet the goals of science literacy by creating highly qualified teachers. However, science education researchers know little about the development of teacher knowledge during an ACP. The purpose of this study was to investigate how science teacher knowledge of learners and lesson structure develops in an ACP. Data sources included a lesson planning task at the beginning of the program, interviews after the first summer of ACP coursework, and an interview-observation cycle during the teacher's first semester teaching. I constructed profiles of four individuals and generated a set of assertions from a cross-case analysis. The four prospective teachers developed knowledge of learners from their experiences in the Secondary Science Methods courses, from their mentor teacher, and from working with students however, they consistently sequenced instruction in ways that gave priority to "inform" types of instruction to transmit knowledge to students. For the teachers, the integration of knowledge of instructional sequences and learners meant that they purposefully added "practice" types of activities to help students learn terms and concepts. Prospective teachers' science teaching orientations acted as a filter for making sense of experiences in the ACP.