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AND INSTRUCTION

A CASE STUDY OF SIXTH-GRADE TEACHERS AND PROBLEM-BASED
INSTRUCTIONAL UNITS: BELIEF SYSTEMS, UNDERSTANDINGS, AND
OBSTACLES (242 pp.)

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The purpose of this study was to explore the pedagogical beliefs, understandings, and obstacles of sixth-grade teachers as they designed problem-based instructional units for mathematics and science. A case study design served as the structure of this research project with sixth-grade teachers. Following a problem-based learning workshop, the four teachers participated in data collection activities that included interviews, a card sort of obstacles, a video tape critique, and group discussions. The teachers' responses were compiled, coded, and entered into a database for analysis.

The findings for each research question addressed the issues of how children learn, the nature of mathematics and science, and instructional design. The data from this study demonstrated that when the sixth-grade teachers designed their problem-based instructional units, they modified the problem-based learning process according to their beliefs, understandings, and encountered obstacles. The four teachers believed problem-based instructional units were motivational and served as creative thinking components to their instructional units. The teachers' pedagogical understanding included using problem-based instructional units as an application of the curriculum's content skills with little emphasis on the process skills. The teachers composed a list of pedagogical

obstacles where a majority was classified as instructional design issues. As an implication of the study, the align-standardized curriculum model was developed.