

“I Can” and “I Can’t” In Mathematics
An exploration of student self-efficacy beliefs and its implications for math achievement in Algebra

Categories (Themes) and Codes

| Relationship Component | General Code | Aspects of Each Component | Specific Code |
|--|--------------|--|---------------|
| Personal relationship with math (the mental and emotional component) | R | A value in the study of math and the commitment of time and work to that study | RV |
| | | Efficacy beliefs | RE |
| | | Personal feelings and attitudes about math | RF |
| Expression of the relationship with math (the behavioral component) | E | Coping mechanisms in the math classroom | EC |
| | | Approach to the course, the content work, and questions. | EA |
| Influences on the relationship (external component) | I | Parental influence | IP |
| | | Peer influence | IPE |

| Finding/Assertion | Evidence (Data Source) | Illustrative Responses from the Data |
|--|---|---|
| <p>A student's relationship with math is affected by their personal experiences, their math efficacy, and their value of math. It is an intricate and complex relationship that affects and is affected by those three components.</p> | <p>Observation Student Reflections Interviews</p> | <p>"This grade (midterm exam) is really important to me. All school stuff is. Math is more important though because I love working with numbers. I just don't understand it." (Emily, Student Reflection, 3-21-06)</p> <p>"I HATE word problems with a passion. I can never get all of the data straightened out on my paper, or in my head. The number and letters get mixed around and I wind up doing the problem 100% wrong." (Emily, Student Reflection 3-22).</p> |
| <p>Related categories and codes RV, RE, RF</p> | | <p>During instruction Samuel sat quietly and took notes. He remained quiet and unassuming. He never asked a single question. After instruction, during independent practice, Samuel got up several time to tell me a story about being the firehouse. He had only attempted a tenth of his assignment and the tenth he had done was scattered and incorrect. The work indicated single attempts at setting up the problem. (Samuel, Observation 3-10-06)</p> |
| <p>Students display a pattern of behaviors that indicate, and are a result of, their self-efficacy beliefs.</p> | <p>Observation Data Performance documents</p> | |
| <p>Related categories and codes EC, EA</p> | | <p>Samuel came in very nervous about the midterm. He stated that this test would mark the beginning or end of his driving life. My mom will kill me if I don't pass" he said. He had been coming to tutoring the two days prior to the midterm exam. (Samuel, Observation 3-20-06)</p> |
| <p>Outside influences play a major role in student self-efficacy beliefs and the expression of those beliefs.</p> | <p>Observation Interviews Parent correspondence</p> | |
| <p>Related categories and codes IP, IPE,</p> | | |