

INVESTIGATING THE MATHEMATICS TEACHING EFFICACY BELIEFS OF STUDENT TEACHERS

Aisling Twohill, Lorraine Harbison, Siún NicMhuirí

Dublin City University

Belief in one's ability to enact change is pivotal to motivation, and thus behaviour (Bandura, 1993). Mathematics teaching efficacy beliefs encompass the extent to which a teacher believes that his/her teaching is capable of bringing about change in the mathematical understanding of his/her pupils, and the extent to which teaching in general supports the learning of mathematics for all children. Bandura (1993) posits that teachers with a low sense of efficacy are less inclined to support children in responding constructively to challenge and may thus undermine children's sense of self efficacy in relation to mathematics.

This research study seeks to explore the Mathematics Teaching Efficacy Beliefs of student teachers as part of a longitudinal design-research study, whereby research findings will guide planning for future modules. The Mathematics Teaching Efficacy Beliefs Instrument (MTEBI) of Enochs, Smith and Huinker (2000) was employed to measure the overall efficacy beliefs of teachers, and also the beliefs within two subscales, the Personal Teacher Efficacy, and Teaching Outcome Expectancy. A convenience sample of 40 undergraduate students participated in a questionnaire based upon the MTEBI with additional questions relating specifically to the content of a Mathematics Education module recently completed by the students. The sample was drawn from a year group of 440 students by invitation.

Many responses to statements of the MTEBI reflected inconsistencies in students' self-efficacy beliefs, with 24 students declaring that they will not teach mathematics as well as other subjects, even if striving to do so (a further 11 were uncertain). However, only 6 students believed that they would not be capable of supporting a child who was struggling to understand. In relation to the efficacy of teaching in general, 34 students agreed that increases in pupils' mathematics achievement are due to the effectiveness of the teacher. In contrast, 25 were uncertain or did not agree that pupil underachievement reflected ineffective teaching, possibly echoing Bandura's contention that teachers with low efficacy beliefs are less likely to foster constructive responses to challenge. More detailed findings will be presented in the poster, including findings from the next phase wherein a second sample of 18 students participated in focus group interviews.

References

- Enochs, L. G., Smith, P. L., & Huinker, D. (2000). Establishing factorial validity of the mathematics teaching efficacy beliefs instrument. *School Science and Mathematics, 100*(4), 194-202.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational psychologist, 28*(2), 117-148.