Suggested Reference


Copyright

Items in ResearchSpace are protected by copyright, with all rights reserved, unless otherwise indicated. Previously published items are made available in accordance with the copyright policy of the publisher.

https://researchspace.auckland.ac.nz/docs/uoa-docs/rights.htm
Student Peer Assisted Mentoring (SPAM): A conceptual framework.

Methods

Three data collection tools were used to investigate the impact of SPAM on the teaching practices and self-efficacy of teacher candidates, as well as the possible negative influence of maths anxiety on their teaching practices. A reciprocal teaching model for mathematics was introduced as a strategy to support students in developing conceptual understanding of mathematical ideas. Students were encouraged to reflect on the process they selected and why it was appropriate. A case-study design was used to investigate the levels of maths anxiety identified and revealed by primary teacher candidates.

Results

The RRTM reduced the maths anxiety of the cohort of teacher candidates as shown in the results from the Maths Anxiety Rating Scale. Students were highly engaged in the problem solving process and were more skilled as student mentors. Of particular note, was the way they moved away from single-mindedly focusing on acquiring the correct answer, to engaging with the process of authentic problem solving as embedded in the RRTM.

Implementation Framework

Phases of the Revised Reciprocal Teaching Model (RRTM)

- Problem: Encourages the students to define the question
- Predicting: What is the mathematical question being asked? What mathematical operation(s) might be employed to solve the problem? What will a reasonable answer look like?
- Clarifying & Questioning: Students ask questions, and clarify misunderstandings. Consider any new ideas.
- Solving: Appropriate manipulatives are available to support students to develop conceptual understanding of mathematical ideas. Students solve the problem using any self-selected problem solving strategy, and model their solution using diagrams, numbers and words.
- Summarising: Students reflect on the strategy they selected and justify why it was appropriate. Students may begin to verbalise mathematical generalisations.

Research Objectives

Maths anxiety exhibited by teacher candidates is a major concern for mathematics education, not only because of the impact it has on the teacher candidates’ self-efficacy, but also the negative influence it may have on their teaching practices, and the students they will teach in classrooms. The aim of this pilot study was to reduce the maths anxiety of a group of teacher candidates. It was also hoped that the process would result in students forming self-selected study groups, and they would recognise the strength of peer mentoring being used in schools as a tool to support students while they solve mathematics problems.

Literature

The model developed for this study was informed by the work of:


Clinical Mathematics Examples

Each animal has 2 eyes so 6 of these pairs had tails so the pool.

Altogether there were 38 arms, 24 eyes and 8 tails, all in the pool.

How many mermaids were there?

While I feel much more confident in maths, I still question myself at times whether the answer/working out is correct.

Does an octopus have arms or legs?

Do I have to use algebra to solve this or can I do it by trial and improvement?