Using reciprocal teaching and learning methods to enhance comprehension in mathematics word problems.

A thesis presented in partial fulfillment of the requirements for the degree of Master of Education Massey University Palmerston North New Zealand

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2010
Abstract

This study reports on a classroom design experiment focused on the use of reciprocal teaching methods when solving mathematical word problems. The design experiment was set in a Year 5 classroom where the teacher and students used a newly designed model to assist when solving word problems. The intervention was implemented in a regular classroom environment and used Figure It Out resource books (Ministry of Education, 1999-2008).

The intervention was developed from reciprocal approaches used in a number of previous studies. Reciprocal reading was originally designed and implemented by Palincsar and Brown (1984). The objective of this study was to adapt this model and incorporate it into a mathematics programme for solving word problems. Students worked in groups while using the model and were explicitly taught procedures at each stage. Discussions within groups were an important component of the design experiment. Throughout the study, students discussed thoughts and strategies that could be used to solve the word problems. They reflected on their answers, ensuring they were providing relevant information and then articulated any errors so they could make changes.

Findings indicated that students were able to use the model to assist them when solving mathematical word problems. They followed the process and were able to identify the key aspects of word problems and answer specific questions correctly, providing sufficient detail. Both the teacher and students found the model to be a useful tool when working with the Figure It Out resource books. Through participating in this design experiment students gained confidence when solving word problems.
Acknowledgements

I would like to acknowledge and thank the many people who have assisted me throughout this study. Most importantly I would like to thank the teacher who allowed me to work with him. His enthusiasm towards the approach, willingness to try anything, and collaborative spirit greatly assisted the success of the intervention. The discussions throughout the process were thought provoking and often raised more questions. I would also like to thank the students in the classes where this process was trialed for their enthusiasm and keen participation. The students are the reason the study was undertaken in the first place. Also thanks to my other colleagues for their interest and discussion around this study.

I wish to extend acknowledgement and many thanks to my supervisors. Dr Margaret Walshaw and Dr Glenda Anthony have offered invaluable support throughout this study period. I have greatly valued their professional suggestions, guidance and encouragement.

Thank you to the school Board of Trustees for their support in allowing me to pursue this study at the same time as working. I would also like to thank the Ministry of Education for providing a ten week study award which was invaluable in allowing me to work with the classroom teacher and students in the design experiment. Without this, the study would have been an even greater challenge.

Finally I would like to thank my friends and family who have offered support and encouragement. They have believed in me and kept me motivated throughout the entire process and have offered themselves as sounding boards for ideas and frustrations.
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