University of Canberra

A REPORT ON THE INITIAL USE AND EVALUATION OF AN INTRODUCTORY TEXT FOR TEACHERS OF PRIMARY MATHEMATICS

by

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PREFACE

I would like to thank all those students who willingly took part in the evaluation sections of the course; especially those who agreed to be videotaped or interviewed. I want also to thank Wayne Ransley, with whom I discussed most of what I have described here and who wrote the other booklets in the series.

My supervisor, Phillip Hughes, has been most willing to discuss the project with me and has given me encouragement and valuable advice.

ABSTRACT

A series of Guides to mathematical content, instructional strategies, appropriate materials and sources of further reading, in the form of booklets, was prepared for use in courses in Primary Mathematics Curriculum for undergraduate and Diploma in Education students. These booklets were intended to take the place of lectures in the course and act, when discussed in workshops, as initial input material for the course.

The booklets were prepared also because there is no text currently available which is suitable for this course. Texts recommended for courses at other Colleges were examined and whilst many of them are useful, none is ideal.

It is impossible to isolate the effect of the use of the Guides from the impact of the course as a whole. Actually, then, the effectiveness of the total course was assessed as it made use of these written materials. Teaching procedures for the course are described in the body of the study.

Undergraduate students were tested, before and after the course, for mathematical concepts functional at the primary level, their beliefs about teaching mathematics, and their attitude towards mathematics. Twelve students were videotaped whilst presenting a number concept before and after the course and ten other students were interviewed at the conclusion of the course. A survey was sent to associates* to assess the effect of the course on each student's teaching of mathematics in the schools. Diploma in Education students undertook only the first two sets of tests because their course was very short.

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* Associates are teachers responsible for the students' experience in schools.

Analysis of the data indicates that the course, making use of these Guides in place of lectures, was effective. A significant gain in understanding was made on the test for mathematical concepts by both groups; a significant change in beliefs about teaching mathematics at the primary level was found in both groups; there was a significant gain with the undergraduate group in the ability to present a number concept; survey forms returned by associates for undergraduate students showed some increase in the use of concrete materials and the amount of mathematics taught in the second half of semester; and students who were interviewed showed that they had realized, at least, what theories and procedures were being advocated in the course. Suggestions for changes and improvements in the course are made as a result of this study.

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CONTENTS (cont.)

APPENDICES

ATTACHMENTS

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[1] Other Guides in the series are available if required. The Guides attached are annotated for revision.

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