A SURVEY OF PRE-SERVICE PRIMARY TEACHERS’ EXPERIENCES OF SCIENCE IN SCHOOLS

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ABSTRACT

In 1990, a large proportion of third year primary trainee teachers at Victoria College had observed or taught very few or no science lessons during the first two years of their course. The students felt that a lack of content knowledge, a crowded school curriculum, and problems associated with managing resources and equipment, were the main factors contributing to the low level of science being taught in schools. By the end of their third year significantly more students had taught science than after the second year. There was also a change in approach to teaching science with more practical activities being included than previously. The science method unit taught to the students in the third year of their course contributed to this increase. The students considered the hands-on activities in class to have been the most effective aspect of the unit in their preparation for the teaching of primary science.

INTRODUCTION

The Discipline Review of Teacher Education in Mathematics and Science (1989) observed that most pre-service primary teachers “have negative attitudes to science and to its teaching and learning” (DEET, 1989, p.37).

In addition to this, at Victoria College we have been, and are, concerned that “our students do not have access to a legitimate experience in the teaching of science as it is presented during the course” (Note 1). The Curriculum and Methodology (C&M) unit at Victoria College is a 44 hour compulsory third year unit. It has a very strong practical emphasis, the science being taught through a hands-on inquiry approach within a school curriculum context.

The unit, in common with most such units, has as its objectives, to

* increase students’ knowledge of science curriculum and methodology
* increase students’ science discipline knowledge
* create in students more positive attitudes to the teaching of science.

The main aim of such a unit is to increase the amount and quality of science taught in schools.

While there have been studies done that explore the attitudes of pre-service primary school teachers to science and the effect of methodology units on these attitudes (Skamp, 1989), there appears to be little data on the effect of such units on the amount and nature of science subsequently taught in schools.
In this study we have investigated pre-service primary teachers' experiences of science teaching during their practicum, before and after the C&M unit, and their perceptions of the usefulness of the C&M unit in effectively preparing them to teach science.

RESEARCH AIMS AND DESIGN
The four main foci of the investigation into students' experiences of science in schools were

* the amount of science experienced by students during their practicum
* the type of science experienced by the students during their practicum
* the factors the students perceived as acting against the teaching of science in schools
* the particular aspects of the C&M unit which positively changed their attitude towards the teaching of science.

These foci were chosen to see whether our concerns about the amount and type of science experienced by students were justified, and to give us better insight into why students did, or did not, teach science. The study was also intended to allow an evaluation of aspects of the C&M unit.

In 1990, all third year students (346) were required to take the C&M unit in Science. These students were the subjects of the study. Questionnaires were administered by C&M teaching staff at the end of semesters one and two. The questionnaire was administered and collected during the students' regular C&M session. The questionnaires were completed anonymously.

RESULTS AND DISCUSSION
Students' backgrounds brought to the C&M Science unit
The majority of the 346 students brought neutral (34%) or negative (51%) feelings about science to the C&M unit (Fig. 1a). In terms of their scientific knowledge, students felt that their knowledge of biological science was better than that of physical science, the knowledge of physical science being generally regarded as poor (Fig. 1b).

![Chart showing feelings about science brought to C&M science by third year pre-service primary teachers.](image-url)