

SMALL GROUP TEACHING

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Small group teaching is a strategy that is now well established in the University of Melbourne Diploma in Education course. It aims to increase the contact that student teachers have with children and schools and to provide a practical teaching task that can be used as a context for a Dip. Ed. class to study aspects of teaching such as lesson planning, student thinking and assessment. Three different uses of small group teaching are described. At the very start of the year, the experience familiarises student teachers with schools and children. Later in the year, it is used to switch the student teachers' attention from their own performances to what their pupils are learning. Excellent co-operation from schools has been forthcoming for these experiences.

Teacher preparation through the degree-plus-Diploma-in-Education path is often criticised for the limited amount of teaching experience that it offers. In the various versions of the Diploma in Education offered at the University of Melbourne, several different strategies are employed to overcome this deficiency. A standard Diploma in Education at Melbourne consists of twenty weeks of University based study and nine weeks of teaching practice, undertaken in blocks in either two or three schools. One long-standing way of increasing the amount of teaching experience has been through the "school-based" programs, where student teachers work in a school for two or three days per week. This paper describes an alternative strategy, "small group teaching", as it is implemented in the stream which caters for about half of the future mathematics teachers. Small group teaching evolved during the eighties, largely at the instigation and inspiration of Dr Rod Fawns, and is now used in most of the other Diploma in Education streams which retain the block teaching rounds.

Small group teaching takes place in schools. The basic aims are to increase the amount of contact that student teachers have with pupils¹ at school, to increase the number and variety of schools that a Dip. Ed. student works in and to provide a practical teaching task that can be used as a context for a Dip. Ed. class to study aspects of teaching such as lesson planning, student thinking and assessment. Three different uses of small group teaching are described below. Although they share the aims outlined above, each use also meets a variety of other objectives, appropriate to the time of year when it takes place.

¹ Throughout this paper, *student* is used to refer to a student teacher and *pupil* is used to refer to a student at school.

The basic organisation of the small group teaching experiences is simple. Friendly schools are requested to lend us three to five classes of students for a period of time. Sometimes we approach the school; sometimes a school may approach us with a specific request. (This year, for example, we have been approached by a school to provide a remedial program.) Pupils are divided amongst our group of Dip. Ed. students, who generally have three to five students each. They are responsible for the teaching of these students over the allotted time, within guidelines discussed in class. In the first period, chaos reigns as all the extra teachers cram into the classrooms but creative use of corridors usually makes the space and noise problem manageable.

EXPERIENCE 1: ORIENTATION TO TEACHING

This begins in the second week of the Diploma in Education year, several weeks before the student teachers embark on their first formal teaching round. It has an important role in familiarising students with Australian schools. Many of our students have not been to school in Australia and some are unfamiliar with almost every aspect of school life – how pupils behave, how teachers behave, what facilities to expect, what the curriculum is (in maths and more broadly), the administrative arrangements in schools, the structure of a school day, etc. For this first experience, we have often used a girls' Catholic school quite close to the University. On the first day at the school, the Deputy Principal has outlined the structure of the school and the school system (government, Catholic, independent etc), characteristics of Catholic education and some aspects of the inner urban environment. In the very first days of the Dip. Ed. course, we will have discussed the normal topic which the pupils would have been studying and the Dip. Ed. class would have together worked on plans for about six lessons, based fairly closely on the school's unit outline and textbook. For example, when the chosen topic was exponential notation at Year 9, the Dip. Ed. students would have discussed the main ideas in the textbook chapter to be taught, would have practised explaining key ideas to each other (e.g. why $2^0 = 1$) and would have been introduced to a few additional resources (e.g. the film "Powers of Ten"). These group discussions back at the University on the topics being taught continue throughout the experience.

During the teaching, the lecturer has an excellent opportunity to observe qualities such as how student teachers relate to pupils, general organisational ability, level of preparation and mathematical knowledge and their facility in English. This can provide important clues for follow up on the first "real" teaching round.

Student teachers are assessed on two items: their lesson plans, including a reflective evaluation and the reports that they write on each of the pupils they teach. These reports (about half a page

per pupil) are to describe what the pupil learnt and the learning style of the pupil and are given to the class teacher. As this takes place in February, these reports can be very useful if the teacher is still getting to know his or her class.

EXPERIENCE 2: FOCUS ON PUPILS' THINKING.

This experience takes place between the second and the third teaching rounds. At this time most students have generally become reasonably adept at standing in front of a class and "teaching". However, during this "teaching", their awareness is almost entirely on themselves and many seem to be aware of the class only as a fairly homogenous mass, with one or two distinguishable spots of trouble or brightness. They are not made aware by normal practice teaching of the huge variety in individual understanding of mathematics and the diversity of pupils' thinking. This is the principal aim of this experience.

The school we have used most frequently for this experience is a boys' school with a strong technical tradition. It is situated in an outer western suburb of Melbourne, an area which some of our students will not have visited. One student wrote in her reflective journal that she had been very fearful of going to teach in the western suburbs because of the reputation of the pupils, but had in fact found the experience very positive. "I didn't know pupils in the western suburbs would be just like those in the east."

During this experience the Dip. Ed. students generally spend one morning at the school for six weeks, teaching two periods. During the other period(s), we organise staff to show them features of the school or talk about current issues such as amalgamations or the uniform debate at the school council. Many students will not previously have been to schools with well equipped automotive workshops and graphics rooms and there is a mathematics laboratory for remedial teaching.

In this experience, the focus is on pupils' thinking, so students will have spent two sessions beforehand at University analysing the important ideas in a topic, learning about common misconceptions and how they are displayed in pupils' work and discussing rich teaching resources for the topic. One year all students taught from the units in *Learning the Language of Functions and Graphs* (Swan, 1985). Each student was able to use the material in the way in which he or she felt it was most appropriate for the individuals in the group. On that occasion, it was interesting to see that only a handful of students initially decided to bring along real containers and coloured water to show the variation in the height of water in a vase being filled at a constant rate.

However, other students were able to see at first hand the obvious success of this concrete approach, and many other student teachers adapted their lesson plans to use concrete materials in the following lesson. This is but one illustration of the benefits to students of having a group all teaching the same material. The quality of discussion of teaching techniques and the opportunities for debating ideas is much greater when there is an immediate and practical shared context.

One mechanism for generating this discussion is to video tape short segments of each student teaching. The segments can then be shown to all students, stopping at the end of each segment for the student concerned to expand on aspects of teaching and learning mathematics that are stimulated by what has been shown. This invariably leads to other students contributing ideas and reflections drawn from their own experience. Students also enjoy seeing themselves in the role of a teacher. Many of them seem to need convincing, at this early stage of their teacher education, that they can teach. (And a few need to be convinced that they can't!)

Students benefit from discussing real teaching incidents and pupils whom they must continue to teach:

how can I get this idea across to Marco when I have just failed three times?

how can I keep the attention of Ross who did my worksheet in two minutes flat?

why is a negative times a negative a positive anyway?

Discussion like this can be further enhanced by videoing snippets of the teaching so that immediately after the lesson, selected students can talk the rest of the group through a few minutes of their lessons, pausing to discuss future actions.

The experience lends itself to a variety of assessments, including preparation and marking of a diagnostic test and a summative test, lesson plans with reflective evaluations, reports on each pupil, analysis of their videotapes for "wait time" or involvement of all pupils etc.

EXPERIENCE 3: CATERING FOR INDIVIDUAL DIFFERENCES.

Because of the informal arrangement between the schools and the University, small group teaching for our secondary Dip. Ed. students can also take place in primary schools. There is otherwise no opportunity for our prospective secondary teachers to visit a primary school. Nearly every group of Dip. Ed. students now undertakes a small group teaching experience in a small country primary school. Over a decade we have built up excellent relationships with the one-, two-, three- and four-teacher country primary schools in the Daylesford area, about an hour's drive from the city. In preparing maths and science activities for primary pupils who are used to working in multi-age

groups, students are forced to design activities that can be tackled at many levels. Watching, for a day or so, the organisation of a multi-age classroom is a powerful demonstration of how to treat pupils as individuals.

CONCLUSION

Small group teaching is a flexible way of achieving a variety of aims in the Diploma in Education programme. In a setting more informal than supervised teaching practice, students can relax and focus not only on their personal classroom performance but on their pupils and how they think and react. The opportunities for discussing shared difficulties almost immediately after they occur are unsurpassed. For the teachers who tolerate the hassles when thirty students invade their classes, there are benefits in being able to sit back and observe their pupils interacting with others and in watching half a dozen different approaches to teaching one topic. We thank them for their co-operation, their patience and for continuing to invite us back again.

REFERENCES

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