

## **Trainee Teachers As Mentors: A Success Story for Both Parties**

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Many writers have reported the success of mentoring programs for children with special interests and it is widely recognised that gifted and talented children are especially suitable as mentoring candidates. While many successful programs have been conducted, difficulty in establishing and maintaining an adequate supply of suitable mentors is often experienced. Some programs have employed as mentors people who were interested, capable and knowledgeable amateurs but not experts in their field. One source of such mentors has been the undergraduates of Colleges and Universities, and these students have often proved to be enthusiastic and effective in the mentoring role.

It is now also almost universally accepted that primary teachers need to be trained to identify, counsel, and teach gifted children in the mainstream. As a consequence, trainees should be provided with experience teaching gifted and talented children in preservice or inservice courses. Most training institutions can provide only very limited

access to gifted and talented children and student teachers receive little or no contact with such pupils.

With the above facts in mind the School of Teacher Education within the University of Technology, Sydney has offered, for the last eight years, a program which sought to meet the needs of gifted elementary school students while providing trainee teachers with valuable and necessary experience with gifted and talented children.

The program entitled Enriching the Mathematics Curriculum matches mathematically gifted year 5 or 6 school children with specially selected, final year trainee elementary teachers who provide a program of instruction closely akin to mentoring. The topics to be pursued are chosen by the student and trainee teacher in collaboration with the university lecturer/adviser and are extension topics chosen to ensure minimal overlap with the school syllabus. The program usually involved one or two sessions per week for a school term but this varied considerably according to the needs of the individual children.

Mentoring sessions usually took place in the child's home but were at the school or the university when necessary e.g. when specialist equipment or facilities were required. The topics were often very practical and the program then included visits to all manner of appropriate locations.

The learning/teaching materials came from a number of sources, with the children encouraged to locate or create their own resources where possible. The unusual nature of many of the areas of research meant that few resources were readily available and required the teachers to create their own on most occasions. This process was strongly supported by the lecturer/advisers.

Lecturer/advisers were responsible for ensuring the quality of lessons and materials, and this necessitated a substantial allocation of time to this process.

### **Selection of Mentors**

While all trainee teachers could be expected to benefit from exposure to gifted and talented children it was considered necessary to restrict participation in this program to trainees who had demonstrated the ability to

work effectively in an independent teaching/learning situation. The criteria for inclusion were;

1. at least a credit average in mathematics education subjects during the first two years of the degree. (Students had had at least 100 hours of mathematics education courses)
2. excellent performance in practice teaching experiences. (Students had had approximately 50 days of practice teaching)
3. lecturer recommendation

### **Selection of School Students**

Schools in appropriate geographical locations were invited to recommend children, usually only one or two, for inclusion in the program. The selection of students was conducted entirely by the school principal and staff with no active participation by the university. Teachers sought to ensure that students selected were gifted and with a strong interest in mathematics and desire to participate. They selected only students who were in need of extension and could be expected to benefit from the

program. The children were, in many cases, high achievers but this was not a necessary prerequisite for inclusion. After selection of the children offers were made to the parents who made the final decision on participation.

Because the number of offers available for any particular school was so small the teaching staffs, without exception, successfully selected suitable participants. This is not to say that the most suitable student was chosen in all cases, but all students selected proved suitable for the program.

### **Benefits for Trainee Teachers**

#### *1. Experience in teaching gifted and talented students.*

Trainee teachers who would otherwise not have met mathematically gifted students have begun to appreciate the great mathematical ability of their pupils. They learn their high level analytical skills, their enthusiasm and self-motivation, and have learned never to underestimate the child's ability. The common myth that gifted students need no special attention has also been dispelled. The trainee teachers have seen that their pupils need to find enjoyment and fulfillment in their lessons,

that they react very positively to a challenge and expect to be taught content which is practical and relevant. They have been able to develop a rapport with their students which leads to understanding of personality, interests, abilities, etc.

#### *2. New understanding of mathematics and mathematics education.*

The trainees have researched and prepared for instruction, content which has often been new to them, and have thus developed new concepts, understandings, knowledge and skills. Working with such capable and creative students has shown that mathematics is an active, practical, and creative discipline which can be a most enjoyable experience. This realisation is likely to effect their own attitudes to mathematics education for all children not just the gifted and talented.

#### *3. Experience with individual instruction.*

The program has provided a dramatic comparison between whole class mainstream teaching and individual instruction. The needs of the individual pupil have been very apparent in these individual (or small group) learning situations.

4. *Understanding of parental roles.* Lessons have often been conducted in the student's home and parent-child and parent-teacher relationships, and the effects of home environment, have become much clearer for the mentor.

#### **Benefits for School Students**

1. *The reward of selection.* Students gifted in mathematics are unlikely to receive the recognition which would be provided to those gifted in areas such as sport, art, etc. Inclusion in this program was a reward in itself.

2. *Individual mentoring.* The benefits of individual interaction with a tutor were apparent with students in the program.

3. *Extension in an interest area.*

4. *New understanding of mathematics.* The emphasis in the learning situations provided was upon students developing a greater understanding of the nature of mathematics. Many came to realise that mathematics was more than just *arithmetic, using algorithms and 'getting the right answer'*

5. *Independence in learning.* The individual instruction provided increased

opportunities for risk taking and helped to develop educational self reliance.

6. *Opportunities for problem solving, application of mathematics and creativity.*

#### **Benefits for the School**

1. *Assistance for gifted children.* The children involved received an individualised program without much time, or any financial, contribution from the school.

2. *Ideas for future enrichment courses.* Many of the resources prepared for individual school students were available for future use.

3. *Contact with University academic staff.*

#### **Benefits for the Parents**

1. *Open education.* Parents of children involved in the program have appreciated the opportunity to have close contact with the mentor and to observe the learning experiences being made available to their child. This contrasts with much of the child's education which is conducted without the availability of direct parent observation or involvement.

2. *Direct evaluation of the tutor.* Parents were, without exception, supportive of the program and in a number of cases employed the mentor to continue tutoring the child after the formal program had been concluded.

3. *No financial cost.* Many parents commented that a service free of cost was very rare in the 1990's.

In summary, *Enriching the Mathematics Curriculum* has been exceptionally successful in achieving its aims of providing trainee teachers with the opportunity to work with gifted children, and gifted students with mentoring which would otherwise not be available.