



2007 Annual review



Welcome to the annual review of the **In2science** Peer Mentoring in Schools Program for 2007.

Contents

| | |
|---|----------------|
| Background information | Page 3 |
| Sponsors | Page 3 |
| Board of Management | Page 3 |
| | |
| Achievements of In2science in 2007 | Page 4 |
| Highlights | Page 4 |
| Current schools involved in the program | Page 4 |
| Semester one and two summary of placements | Page 5 |
| Peer Mentoring activities in schools | Page 6 |
| Mentor awards for long service | Page 6 |
| In2nanotech Outreach Program | Page 7 |
| ASISTM funding project | Page 8 |
| | |
| Evaluation process and findings | Page 9 |
| Internal Evaluation Results | Page 9 |
| i. Mentors Evaluations | Page 9 |
| ii. Students Evaluations | Page 11 |
| iii. Class Teachers' Evaluations | Page 13 |
| iv. Link Teachers' Evaluations | Page 17 |
| | |
| The Future | Page 19 |

Background information

Starting in 2004, In2science is a joint venture between the Faculty of Science, Technology and Engineering at La Trobe University and the Faculty of Science at the University of Melbourne. **In2science** is an exciting and innovative program that gets to the heart of Science and Mathematics through the use of university students as peer role models to engage with high school students and teachers.

The aims of **In2science** are:

- To generate enthusiasm for Science (especially the enabling subjects of Chemistry, Mathematics and Physics) in students in the middle years of their secondary education (Years 7-10).
- To place university students in schools to act as positive role models to secondary school science students inspiring them to achieve their potential.
- Through the role models, promote the value and rewards of Science as a positive career choice.
- To foster links between schools and universities.

Sponsors

In2science is proud to have had the support of **the William Buckland Foundation** as its major funding partner from 2004 - 2007. It is only with this kind support that we have been able to achieve what we have done so far.

This year **In2science** has continued to have wonderful support from staff in the faculties of Science at **La Trobe University** and **the University of Melbourne** and sincere thanks go out to all their staff members.

Board of Management

In2science is overseen by a Board of Management whose members are:

Chair: Dr. Barry Jones AO

Prof. David Finlay, Dean, Faculty of Science, Technology & Engineering, La Trobe University

Prof. Peter Rathjen, Dean, Faculty of Science, the University of Melbourne

Prof. Rob Norris, Dean, Faculty of Science, Monash University

Prof. Bob Officer, Trustee, The William Buckland Foundation

Dr. Les Trudzik, Director, The Allen Consulting Group

Mr Tony Cook, General Manager, Education Policy and Research, Department of Education and Early Childhood Development, Victoria

Ms Soula Bennett, Head of Middle Years, Northcote High School

Peer Mentor Bonita talks to students from Reservoir District SC on an excursion to La Trobe's Wildlife Sanctuary.



Achievements of In2science in 2007

In 2007 **In2science** continued to grow and diversify. It has become a known force in promoting engagement in science and mathematics within schools and the wider community and new programs are seeking our advice and support to establish mentoring in their own locality. **In2science** is now working with over 30 schools in Melbourne, Bendigo, and Wodonga.

Here are some of the **highlights** of this year:

1. Successfully added six more schools to the program taking the total to 30.
2. 96 new Mentors trained in 2007.
3. **Placing approximately 70 students** into partner schools each semester – double that of 2006.
4. Increased awareness of the program in our partner university communities with increased numbers of students looking to participate (recruitment for 2008 has over 130 students interested in being placed as a Peer Mentor).
5. 98% of Peer Mentors feeling they were good role models to students.
6. 88% of school students wanting to work with a Peer Mentor in future lessons.
7. 44% of school students now more interested in pursuing science and/or maths beyond Yr 10.
8. Successfully completed an ASISTM funded project with Monash University and 8 additional partner schools achieving all milestones.
9. involvement in a DVD for the Department of Education and Early Childhood Development reviewing their School Innovation in Teaching (SIT) program.
10. Successful running of the first **In2nanotech** Inter School Challenge event – won by students from Murtoa College.
11. Successful running of the second **In2nanotech** outreach program for nanotechnology, which ran in November 2007 in six schools in Gippsland.
12. Five Mentors received Certification and acknowledgement for long service to Mentoring (three placements or more).
13. Numerous visits of school students to the partner universities and incursions of university staff to schools.
14. Peer Mentors receiving offers to undertake Graduate Diplomas in Education in 2008.
15. **In2science** gained funding from the Department of Education and Early Childhood Development to continue the program till 2010.

Current schools involved in the program

| | | |
|------------------------------------|-------------------------------------|---|
| Eltham HS – '04 | Mac Robertson Girls' HS – new '05 | Lalor North SC – new '06 |
| St Helena SC – '04 | Glen Waverley SC – new '05 | Mt Waverley SC – new '06 |
| Mill Park SC – '04 | Strathmore SC – new '05 | McKinnon SC – new '06 |
| East Doncaster SC – '04 | Reservoir District SC – new '05 | |
| Macleod College – '04 | Flora Hill SC, Bendigo – new '05 | Bundoora SC – new '07 |
| Pascoe Vale Girls C – '04 | Golden Square SC, Bendigo – new '05 | Coburg Senior HS – new '07 |
| Northcote HS – '04 | Footscray City College – new '05 | Fitzroy HS – new '07 |
| Princes Hill SC – '04 | | Eumemmerring Coll, Gleneagles Campus – new '07 |
| Wodonga Middle Years College – '04 | Thornbury HS – new '06 | Kangaroo Flat SC – new '07 |
| Melbourne Girls College – '04 | Viewbank Coll – new '06 | Kew HS – new '07 |
| | Banksia SC – new '06 | |
| | Preston Girls' SC – new '06 | |



Mentor Kevin helps students at Mt Waverley SC understand genetics

During 2007 there were once again two rounds of placements; one in each Semester.

Semester One - Summary of Placements

In2science added new schools to the program and grew the number of students participating as Peer Mentors.

Placements ran for ten weeks in Terms 1&2.

| | La Trobe University | The University of Melbourne | Total |
|---|---------------------|-----------------------------|-------|
| Number of university students who expressed interest in mentoring | 87 | 46 | 133 |
| Mentors actually placed | 43 | 27 | 70 |
| Schools with In2science Mentors placed | Metro | Regional | |
| | 24 | 4 | 28 |
| Teachers | 70 | 7 | 77 |
| Number of classes | 95 | 7 | 102 |
| Students (based on an average of 22/class) | 2090 | 154 | 2244 |
| Placement No. of weeks | | | 10 |
| Hrs in schools (approx)/week | | | 105 |

Four more schools were added to the program: **Coburg Senior HS, Fitzroy HS, Kew HS and Kangaroo Flat SC in Bendigo**, taking the total number of schools linked to the program to **28**.

ASISTM schools project placements

| | La Trobe University | The University of Melbourne | Monash Uni | Total |
|--|---------------------|-----------------------------|------------|-------|
| Mentors | 1 | 2 | 22 | 25 |
| Schools with Mentors placed | Metro | Regional | | |
| | 8 | 1 | | 8 |
| Teachers | 14 | 1 | | 15 |
| Students (based on an average of 22/class) | 462 | 44 | | 506 |
| Placement No. of weeks | | | | 10 |

Semester one saw the final ASISTM school placements.

Semester Two - Summary of Placements

This semester saw **In2science** grow to **30** schools in which where placed 63 Peer Mentors. The additional schools were **Bundoora SC and Eumemmerring College (Gleneagles campus)** in the metropolitan area.

| | La Trobe University | The University of Melbourne | Total |
|---|---------------------|-----------------------------|-------|
| Number of university students who expressed interest in mentoring | 75 | 36 | 111 |
| Mentors actually placed | 43 | 20 | 63 |
| Schools with In2science Mentors placed | Metro | Regional | |
| | 25 | 3 | 28 |
| Teachers | 66 | 8 | 74 |
| Number of classes | 97 | 7 | 104 |
| Students (based on an average of 22/class) | 2134 | 154 | 2288 |
| Placement No. of weeks | | | 12 |
| Hrs in schools (approx)/week | | | 111 |

Unfortunately there were no Mentors available for Wodonga Middle Years College and Mill Park SC wanted to have a semester off due to changes in staffing within the school this resulted in 28/30 schools having Mentors placed.

Since **In2science** started in 2004 there have been **348** Peer Mentor placements interacting with **508** Year 7-10 classes working with approximately **11,000** students. Our Peer Mentors have provided over **5640** hours of mentoring support, which is a fantastic achievement.

Peer Mentoring Activities in Partner Schools

Throughout the year our Peer Mentors have supported the teaching of science and maths in a wide variety of ways. The most common activity for Peer Mentors is supporting students to undertake their class work and practical activities. Peer Mentors help the students understand the topics being covered and help them take an investigative approach to their studies. Much of the time they have worked on a one-to-one basis with students. Teachers have had the opportunity to do new activities supported by a Peer Mentor and to gain some professional development from them on subject areas with which they are less familiar.

Examples of the variety of ways in which Peer Mentors have contributed to the teaching of Science and Maths this year:

- Supported IT sessions in both Science and Maths classes,
- Supporting bridging programs in maths and science for new students to Australia,
- Running science workstations,
- Animal dissections,
- Helping students investigate geology,
- Forensic science practicals,
- Nanotechnology presentations,
- Showing nematodes to students ,
- Excursion to Pharmacology lab at the University of Melbourne,
- Presentations on physics and electronics,
- Field trips to the Melbourne Wildlife Sanctuary,
- Helping teachers plan physics units,
- Visits to La Trobe's microbiology labs,
- Demonstrating practicals,
- Made presentations about their own career path from Y10 to current year,
- Supported research for science projects,
- Allowing teachers to try new methodology,
- Arranged for academics from the university to run gel electrophoresis sessions in school.



Peer Mentors Grace, Elyse, Oliver and Stephen with Coordinator: John McDonald (left)

In2science was featured in a Department of Education and Early Childhood Development DVD reviewing their School Innovation in Teaching (SIT) program.

Overall our Peer Mentors have been extremely active throughout the year supporting many varied activities and helping to engage the students.

Mentor awards for long service

Semester 2 also saw the acknowledgement of our longer serving Peer Mentors (those who had undertaken 3 or more placements as part of the program). Mentors were presented with letters of commendation from the Dean of Science or their respective institution of study during a morning tea or lunch event. Students receiving commendation were:

Erin Smith, LTU
Sharon Honicke, LTU

Vincent Lam, Uni Melb
Alisa Sedghifar, Uni Melb
Pramana Tedjosiswoyo, Uni Melb



Prof Finlay with Sharon and Erin at La Trobe University



In2science Board member Soula Bennett, Alsia (centre) and Prof Peter Rathjen at the Faculty of Science end of year celebration, the University of Melbourne

In2science is proud to have so many Mentors show so much commitment to the program. These events will continue a regular way or rewarding the Peer Mentors as it continues.

In2nanotech Outreach Program

In 2006 **In2science** applied for funding to offer regional schools a program of visits by Mentors to enthuse their students. The idea was to run a nanotechnology-based activity in regional schools using Peer Mentors. Nanotechnology was chosen as it is a new and exciting aspect of science that is becoming part of the curriculum. It covers physics, chemistry and biology so appealed to a diverse range of students. It is also a topic that many teachers have asked about from a professional development point of view.

Nanotechnology Victoria LTD kindly provided funding for the **In2nanotech** program to run visits to three regional areas of Victoria; one a year for three years (2006-7, 2007-8, 2008-9).

The second roadshow visited schools in **Gippsland** in November 2007. Here 6 schools had a 2hr session of hands-on workshops to introduce students to the concept of nanotechnology. Each school is also participating in an Inter School Challenge with each researching an aspect of nanotechnology and then making a presentation at an event in March '08. Students will receive online support through a type of E-mentoring.

Evaluation results for this event were extremely positive with staff and students gaining much from the experience, 53% (n=131) of students said they were more interested in science after the visit. 81% of students found the workshops interesting.

Many thanks to our Mentors Daniel Langley (LTU), Leigh Sands (LTU), Tom Payton (LTU) and Emma Thornton (LTU) for giving up their time to help run this activity.

More details can be found at: <http://www.latrobe.edu.au/scitecheng/mentoring/in2nanotech.htm>



Mentor Daniel explains how nanotechnology cuts out harmful solar rays

ASISTM Funded Mentoring Project

This year saw the end of the ASISTM funded project. **In2science** along with **Monash University** and eight additional schools received funding to broaden the scope of Peer Mentoring. This funding was part of the *Australian Schools Innovation in Science, Technology and Mathematics Project* funded by the Australian Government Department of Education Science and Training as part of the *Boosting Innovation in Science, Technology and Mathematics Teaching (BISTMT) Programme*.

The University to School Peer Mentoring Program in Victoria project runs for 18 months from October '05 till June '07.

Partner schools are:

Haileybury College, Huntingtower School
Carwatha College, Doncaster SC,
Kurnai College, Sacre Coeur
Mazenod College, Whitefriars College

Achievements from this program include the successful placement of Mentors from all three universities into the schools and the running of cluster meetings and seminar programs. These have covered topics such as:

Nanotechnology, Synchrotron, Bio21, Space Science

Teachers from the partner schools, **In2science** program and beyond were invited to these sessions to help enhance their personal knowledge of the topics.

A website was also been established to share the experiences of these schools:

<http://www.latrobe.edu.au/scitecheng/mentoring/asistm.htm>



Mentor with students at Sacre Coeur

In2science Evaluation Process and Findings

The **In2science** evaluation process took place in both semesters, incorporating 125 informal Mentor placement visits by the Peer Mentoring Coordinator to see the Peer Mentors in action and support them on their placements. These visits also offered the teachers the opportunity to give feedback and ask questions about the mentoring process.

Internal Evaluation

At the end of each semester there was an internal assessment of the program. This involved questionnaires being given to students, Peer Mentors and class teachers. At the end of the year informal meetings with each Link Teacher were arranged to review the year from the schools perspective:

i. Mentor Evaluations

Total number of returns= 48/133 (32/70 sem 1) (16/63 sem 2)

| | Strongly agree | | Agree | | Disagree | | Strongly disagree | |
|--|----------------|------|-------|------|----------|------|-------------------|------|
| | | % | | % | | % | | % |
| Did the training prepare you well enough? | 37 | 77.1 | 9 | 18.8 | 0 | 0.0 | 2 | 4.2 |
| Have you gained a sense of doing something useful? | 20 | 41.7 | 24 | 50.0 | 3 | 6.3 | 1 | 2.1 |
| Have you improved your communication skills/ | 17 | 35.4 | 26 | 54.2 | 5 | 10.4 | 0 | 0.0 |
| Has your own subject knowledge been reinforced? | 7 | 14.6 | 30 | 62.5 | 10 | 20.8 | 1 | 2.1 |
| Has being involved improved your self confidence? | 15 | 31.3 | 31 | 64.6 | 2 | 4.2 | 0 | 0.0 |
| Have you gained an insight into others learning? | 22 | 45.8 | 26 | 54.2 | 0 | 0.0 | 0 | 0.0 |
| Helped understand other cultures? | 13 | 27.1 | 33 | 68.8 | 1 | 2.1 | 1 | 2.1 |
| Been useful for career decision making? | 17 | 35.4 | 21 | 43.8 | 10 | 20.8 | 0 | 0.0 |
| Interfere with Uni studies? | 1 | 2.1 | 7 | 14.6 | 28 | 58.3 | 12 | 25.0 |
| Did the students gain an insight into university? | 6 | 12.5 | 25 | 52.1 | 17 | 35.4 | 0 | 0.0 |
| Do you feel you were a good role Model? | 13 | 27.1 | 34 | 70.8 | 1 | 2.1 | 0 | 0.0 |

It was offered to Mentors that had mentored before in semester 1 that they need only do another evaluation if they felt things had been better/worse on their semester 2 placements.

- Peer Mentors continue to have a sense of doing something useful and value the opportunity to get involved and develop their skills, both scientific and communication.

“I think this program really helped me to gain confidence talking in front of people and I think it has helped my one on one communication skills as well.”

- 80% of Mentors ‘agreed’ or ‘strongly agreed’ that the experience was useful for their **career decision making** citing **In2science** as influential in both their decision making and confidence to apply for such courses.

“Aside from realising that I really like the classroom atmosphere, it gave me a chance to use my chemistry and communication skills to help the kids.”

“I now have an insight to the classroom and how to run things. The way my teacher constructed the sessions was also interesting.”

- Several Mentors applied for teaching courses in 2008. Most citing **In2science** as influential in both their decision making and confidence to apply for such courses.
- Training continued to receive positive feedback with 77.1% of Mentors answering ‘strongly agreed’ and 18.8% ‘agreed’ to feeling well prepared to go into the classroom.

- Mentors felt very positive about their role; 97.9% ‘strongly agreed’ or ‘agreed’ that they were a good role model.

“I believe I had a positive contribution to the students’ work ethic and I also felt that I shed light on queries about university life.”

- Many Mentors commented that their **self confidence** had improved with only 4.2% disagreeing with this statement.

“I gained more self confidence about my ability to understand science, and learn new things quick enough that I was able to explain it to others.”

“Yes - it was great to be able to contribute with explaining difficult concepts to the students as a whole as well as working on-on-one with those who were having particular trouble. I felt like I could really make a difference with the pracs especially because most of the students had never seen the equipment before. I gained a bit more confidence and felt that the students wanted me there - that's a pretty great feeling.”

- Mentors were asked to give reasons **why other university students should be involved** in the program and they came up with some very positive and interesting reasons:

“It’s always good for brushing up foundational concepts in your area of study. Also useful for those thinking of teaching.”

“Two reasons - young people in the community benefit from a young, enthusiastic mentor, sometimes they just need to be shown what options (such as science) are available to them; and personal rewards for the mentor themselves - satisfaction from knowing that something they are doing is positively influencing the education of the students.”

“It is rewarding knowing that you assisted someone’s learning and assisted the teacher in educating our future generations.”



Mentor training session

“It’s a great opportunity to help young students. I’ve learned a lot of communication skills from this. I’ve gained much more than I gave.”

“It is a good way to put your skills into practice. A science course is not just learning about science, it provides opportunities to develop critical thinking, analysing and other useful skills. It is not until you undertake this program until you see just how much you have grown and developed. It is also another opportunity for you to grow and further enhance your communication skills.”

“It is a great opportunity for students with a passion for science from of all universities to share their knowledge with younger students. It also benefits the mentor in helping them work "with" science and broaden their ideas of what science involves, in particular scientific communication.”

“It is a great opportunity to have some fun and share you passion about science as well as get out of your comfort zone.”

“It is important to show young people that science is a really good field to get in to. It helps you with communication skills/ career choices. Gives you a balance between uni/work/study etc.”

“I think the experience is invaluable. Not only are you helping students learn, you're their link to university life and the life outside of school that they might not know too much about.”

- Mentors only had a few issues and this mainly related to communication problems with the class teacher or the lack of opportunity to interact with the students:

“Time factor was a problem. At times it interfered with uni studies/life.”

“Sometimes it was difficult to respond to some students who were guarded or completely not interested in the class activities.”

“Only that I was able to go to my school only four times due to constant school commitments such as camp, parent/teacher interviews etc. so my issue was I didn't get to know the students at all well.”

“There were so many disruptions in the placement like Science competitions, school tests, etc. Also, there was lack of communication with the teachers e.g. the teacher did not inform me of the change of experiment they were doing despite having established a convenient communication method, i.e. email.”

“Getting some students to feel comfortable with me.”

“My teacher was away on several occasions during the start of placements which made it harder to get involved initially.”

“The biggest challenge for me was trying to communicate with students who just didn't want to be there.”

- Some issues did arise where Mentor felt the class teacher did not have a full understanding of the role of the Mentor and the possibilities for utilising them.

“The teacher was very hesitant about having me there in the first place but it was ok once he understood my role a little better.”

ii. Students' Evaluations

Total number of school students returns= **603/2060** (306/1020 (sem 1), (297/1040 sem 2)

| | | | | |
|---|------------------|------------------|------------|------|
| Did you find the Mentor helped you learn more? | Most of the time | Some of the time | Not at all | |
| | 44.9% | 47.1% | 8.0% | |
| Did having the Mentor make the lessons more interesting? | Yes | No | Sometimes | |
| | 48.8% | 13.6% | 37.6% | |
| Do you think the Mentor helped you understand the topics? | Yes | No | | |
| | 80.6% | 19.4% | | |
| Did the Mentor become more confident and skilled than at the start? | A lot more | More | No change | Less |
| | 24.5% | 57.2% | 18.1% | 0.2% |
| Are you now more interested in pursuing the subject beyond yr 10? | Yes | No | | |
| | 43.8% | 56.2% | | |
| Would you like a Mentor to help with future lessons? | Yes | No | | |
| | 87.6% | 12.4% | | |

- Students felt they learned more, 44.9% said ‘most of the time’, 47.1% said ‘some of the time’.
- There was an **increase** on previous results in the number of students saying lessons were ‘more’ interesting with 48.8% saying ‘yes’ and 37.6% saying ‘sometimes’.
- Over 80% of students felt they understood the work better with Peer Mentors present, mainly due to there being more adults to ask for help. This was up on last year by 5%.

- The number of students now interested in pursuing the subject beyond Yr10 rose higher than last year with **43.8%** now more interested which is a great achievement.
- **87.6%** of students want a Peer Mentor in future lessons
- Students commented:

“Every single time I needed help he was there. He made me understand everything I didn’t know. He was great to have around and he was inspirational. Made me love physics.”
Y12

“The mentor would explain the question really well and then lead me to the answer without giving it away. So I ended up working it out myself with a little bit of extra help.”
Y7



Mentor Peta helps students during a visit to La Trobe’s Microbiology laboratories.

“The mentors are younger so they aren’t boring and answers are fresh in their brains so they tell you everything but still make you think.”
Y7

“Mentor helped me understand things in a less complicated way”
Y7

“Mentor was encouraging”
Y9

“Made it fun. It was great to have someone to sit with in a small group – made things easier to grasp.”
Y10

“Mentor discussed with me all the issues that may have arisen in my experiment. She had a lot more time to brainstorm with me than a regular classroom teacher would.”
Y10

“Mentor let me see things from a different perspective and I found it easy to approach her.”
Y9

“She was a wonderful mentor to me as she was very engaging and taught us many valuable things”
Y10

“The mentor made science fun, which also made me learn more. He simplified things and made it interesting. He showed us a lot of confidence.”
Y8

“She tried to explain things but they were too complicated for my understanding.”
Y11

“Mentor gave us good clear examples and good analogies. Explained things fully and energetically/entertainingly.”
Y10

“Mentor presented the information we needed to know in an entertaining and interesting way. He engaged the whole class in a series of activities and had the class’s full attention.”
Y9

Overall feedback was positive and on par with previous years.

iii. Class Teachers' Evaluations

Total number of returns= **57/151** (28/77 sem1) (29/74 sem 2)

| Subject area (<i>all placements</i>) | Gen Sci | Maths | Biol | Chem | Physics | Earth Science |
|--|--------------|---------------|---------------|-------|---------|---------------|
| | | 46.2% | 23.1% | 7.7% | 18.5% | 3.1% |
| Year Level (<i>all placements</i>) | 7 | 8 | 9 | 10 | 11 | |
| | 16.4% | 11.0% | 31.5% | 32.9% | 8.2% | |
| Did having a Mentor cause disruptions | Yes | No | | | | |
| | 10.5% | 89.5% | | | | |
| Was more planning required for lessons? | Yes | No | | | | |
| | 19.6% | 80.4% | | | | |
| Did Mentor help organise any activities? | Yes | No | | | | |
| | 42.9% | 57.1% | | | | |
| Is there any way you could have made more use of the Mentor? | Yes | No | | | | |
| | 72.2% | 27.8% | | | | |
| Rate Mentors impact on enthusing students? | All enthused | Some enthused | None enthused | | | |
| | 32.1% | 67.9% | 0.0% | | | |
| Would you like a Mentor in future? | Yes | No | | | | |
| | 93.0% | 7.0% | | | | |

- As per the programs aims most placements took place in classes from Y7 – 10 with only a couple of students working with Y11 classes in subject areas specific to their degree.
- Teachers continued to give a very positive response to the program.
- **Years 9 and 10** once again were the more popular years to place Mentors.
- 89.5% of teachers felt that the Mentor caused **no** disruption. Only a couple of comments were made re disruptions:

“Our timetable causes difficulty – our problem.”

“Rearranging tasks to be working on something of sufficient interest to the mentor was difficult. Fortnightly classes were unsatisfactory.”

“Always had to ensure was doing something hands on. Avoiding chat and talk from teacher.”

“Some students asking mentor irrelevant/inappropriate questions – not focussed.”

“Had to ensure that lessons when the mentor was present were the type they could effectively participate in. this one negative was far outweighed by the advantages.”

- **80.4%** of teachers felt there was **no additional planning required**. Last year this was 11% higher indicating that teachers were looking to undertake more planning to maximise the benefits of having mentors in the classroom – a big plus.
- Only **42.9%** of teachers said the Mentors contributed to planning. In some cases this was due to a lack of confidence or time by the Mentor.

Teachers commented that Mentors helped by:

“Electronics/photonics workshop at LTU was organised. Designed worksheets for students. Brought in examples of equipment.”

“Prepared PowerPoints to support work in class.”

“Helped with planning lesson sequence.”

“Prac demonstrations, resources, excursion planning excellent support.”

“He organised an excursion to Uni Melb science dept.”

“Yes, great ideas – able to assist in recognising problem areas and problem solving/trouble shooting.”

“Not expected to.”

“Helped out during Y10 interview day. Mentor acted as an interviewer for many students and did a great job.”

“Mentor took initiative and was proactive in class. Mentor organised an excursion to La Trobe Dept of Microbiology.”

- This year more teachers felt they could have **done more to maximise** the benefits of having Mentors in the classroom 72.2%, up 10% on last year. Teachers are much more aware of the benefits and over time are looking for new ways to maximise the benefits Peer Mentors bring to the classroom.
- When asked if teachers thought their students were more enthused about science, many found this a difficult question to answer. Many had anecdotal evidence which was valuable. All thought that at least some in each class were more enthused and almost a third of teachers thought all their students were more enthused. No teachers reported that students were not enthused.
- When asked to identify the main advantages of having Mentors, teachers responded:

“Enables us as a class teacher to spend more time with those students who have needs – knowing there is someone else to help out.”

“Can further explain concepts to weaker students. Helps the class to be more enthused.”

“Having someone that students can identify with and ask about a future in science. Having another knowledgeable person to assist not only the students but also the teacher.”

“Able to get through much more practical work. Immediate response to questions.”

“Provides a greater opportunity for student- teacher communication. Increased interaction – development of a variety of ways to teach.”

“Students get the sense that they are scientists too. Motivates and makes it real.”

“Teacher can be more confident knowing the mentor can provide backup on content. Activities run more smoothly.”

“Inspiration for the students.”

“Providing a connection beyond the classroom into science and university ‘life’. Access to cutting-edge and recent science initiatives.”

“Helped make the connection between science class and science in work.”

- Teachers continue to see there are many benefits from the program and all schools and teachers (except four over the year) who responded to the questionnaire wished to continue their involvement.
- Communication between the teacher and the Peer Mentor continues to be seen as crucial and teachers need to be continually encouraged to establish lines of communication with their Mentor.
- When asked to note any **advice** they would have to a teacher having a Mentor for the first time, current teachers responded:

“Allow them to participate actively in all activities. Draw upon their enthusiasm and wealth of practical experiences.”

“Listen to mentor and try to monitor their comfort zone. Take advantage of their expertise.”

“Ensure you are fully aware of their role.”

“Talk to mentor about what they want to get out of the program and organise the set up around that.”

“Be contactable. Talk about what is happening the following week and what/how the mentor can help.”

“You are fortunate to have them. Plan some activities that you have been wanting to do but perhaps could not because you needed extra support.”

“Try to remember to factor the mentor into the lesson preparation.”

“Get them talking to students in small groups as soon as possible. Recognise that they are very knowledgeable and have access to useful resources. Plan with them to present small tasks where possible.”

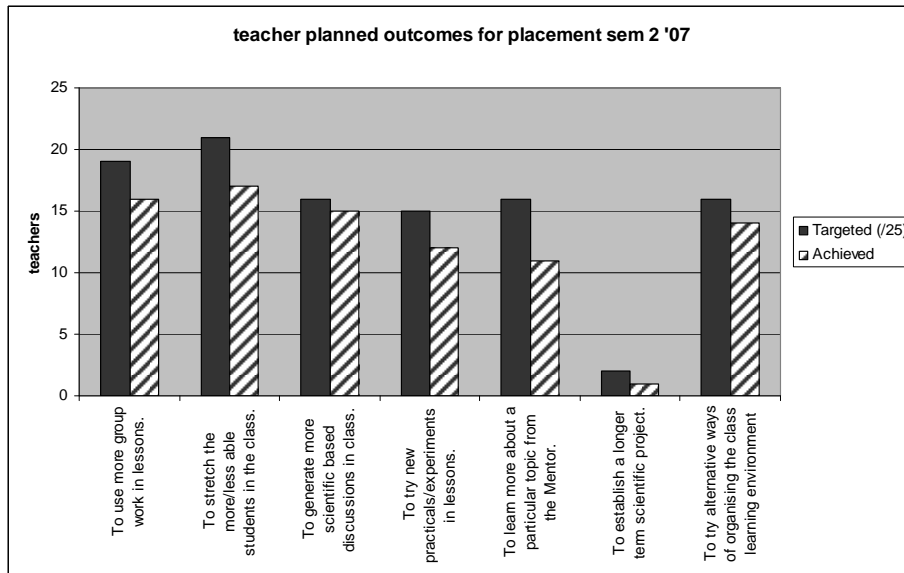
“Re-introduce the mentor each week and go over their role.”

“Ensure the mentor feels part of the team; treat them professionally as they have so much to offer.”

Planned Outcomes

In semester 2, 25 of the teachers who submitted evaluations also completed the outcomes planning form. Targeted outcomes were noted at the start of a placement and then assessed at the end of the placement to see if they had achieved them.

| N=25 | Targeted (/25) | % | Achieved | % achieving goal |
|---|-----------------------|----------|-----------------|-------------------------|
| To use more group work in lessons. | 19 | 76% | 16 | 84% |
| To stretch the more/less able students in the class. | 21 | 84% | 17 | 81% |
| To generate more scientific based discussions in class. | 16 | 64% | 15 | 94% |
| To try new practicals/experiments in lessons. | 15 | 60% | 12 | 80% |
| To learn more about a particular topic from the Mentor. | 16 | 64% | 11 | 69% |
| To establish a longer term scientific project. | 2 | 8% | 1 | 50% |
| To try alternative ways of organising the class learning environment E.g. using work stations that the student move between. | 16 | 64% | 14 | 88% |



In most instances teachers set targets and were on the whole successful in achieving them. By setting targets it allowed the teachers to keep a focus on what they wanted to achieve through having a Mentor in the class. Only two teachers wanted to establish a longer term project with students. These take time and effort and in most cases teachers did not have the flexibility to undertake such activities. Most popular target was to challenge the more/less able students in the classes and 81% achieved this aim. The least successful target was for those teachers wishing to learn more about a topic from the Mentor.

Teachers commented that mentors helped them achieve their aims by showing increased knowledge and understanding and good communication skills. The extra pair of hands allowed teachers to focus on completing tasks. Mentors allowed more practical work to be undertaken. Mentors had good lab skills which they could apply in the classroom. Mentors also brought new ideas and opportunities into the classroom.

Obstacles to achieving the targets were mostly time related and the need to ensure the core curriculum was being covered.



Mentor Rebecca talks to students about nematodes

iv. Link Teachers Overview

Link teachers were asked to give summary feedback on the placements.

| (n=21/28) | Sem 2 '07 |
|---|-----------|
| Where you able to explain the program to staff | |
| Yes | 19 |
| Peer Mentoring Coordinator to do | 2 |
| how easy was it to allocate placements | |
| Easy | 7 |
| OK | 12 |
| Difficult | 2 |
| How many Mentors next semester | |
| 1 | 1 |
| 2 | 8 |
| 3 | 10 |
| 4 | 2 |
| Preferred year level | |
| any | 5 |
| 7-8 | 6 |
| 9-10 | 10 |
| Preferred subject areas (if any) | |
| Biology | 2 |
| Chemistry | 5 |
| Physics | 7 |
| Geology | 1 |
| Mathematics | 1 |
| Willing to be involved next year? | |
| yes | 21 |
| no | 0 |

This year meetings were arranged with each Link Teacher to go through their experiences and gain answers to the above questions. Teachers commented that this method made the whole process much more informative

- Once again the main issue concerning Link teachers was the issue of **matching** the **availability** of Mentors to the **needs** of teachers. This continues to be an issue and is usually resolved through negotiation.
- Occasionally there have been cases where Mentors have not been able to be placed and no alternatives can be found.
- Link teachers were asked to comment if they had evidence to say students were more interested in science and maths. The general feedback was that this is difficult to measure though comments received were positive:

“Our bridging program students gained much from the experience.”

“Anecdotal feedback from maths students who said they were much more confident and positive about their studies.”

“Students are asking for the mentor each week and students have shown greater interest.”

“Students enjoy having the mentor in the class as a positive role model.”

“Students seem more engaged.”

“Students who worked with the mentor on a one to one basis more focussed.”

“Students asking - ‘when do we get another mentor?’”

- Link teachers were asked how **In2science** had helped their science teaching outcomes:
“Mentor produced resources that are being used by all teachers.”
“Teachers now including practical activities worked on with the Mentor in their teaching.”
“Other teachers are now asking to have a Mentor.”
“Mentors have helped raise the profile of science in the school and students have seen that university is an achievable outcome for them.”
- Link teachers were also asked if there was anything else **In2science** could do to help them in their school:
“Support with whole school challenge event, mid year 2008.”
“School looking for support with numeracy and team teaching ideas.”
“School looking to introduce an elective on a science project which the Mentors could offer additional support.”
“Hoping to have mentors talk to later year students about career options in science and mathematics.”



Mentor Peter demonstrates to students

The Future -2008 and beyond

1. In 2008 **In2science** aims to build on the successes it has achieved so far by allowing more tertiary science and mathematic students to get involved in the program and offer their support and enthusiasm to more students and teachers in schools. **In2science** will continue to add **new schools** for semester one and two. There are approximately 130 university students looking to find placements.
2. 2008 will see the move to funding of the program by the **Department of Education and Early Childhood Development** and additional funding partners from philanthropic organisations and/or industry.
3. **In2science** will be working with the **Monash Science Centre** and **Monash University** to place students from their Faculty of Science into the program from **semester 2, 2008**.
4. The **In2nanotech** outreach program will run the Inter School Challenge for schools in the Gippsland area as a follow up to the workshop visits of November 2007. Another program of visits will take place in November 2008 to continue the benefits for other regional schools in the north west Victoria area.
5. A **biosciences** roadshow will be investigated for delivery in 2009 under the same format as the In2nanotech program.

For further information please contact:

John McDonald

Peer Mentoring Coordinator

In2science - Science Peer Mentoring in Schools

C/o Faculty of Science, Technology & Engineering La Trobe University 3086

Tel: (03) 9479 2523

Fax: (03) 9479 2585

Mobile: 0418 333 163

Email: j.mcdonald@latrobe.edu.au

<http://www.latrobe.edu.au/scitecheng/mentoring/index.html>