

## The Undergraduate Ambassador Scheme Implemented at St Andrews ID4001 - Communicating and Teaching Science

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### History

- St Andrews University – schools interactions
- UAS started 2001
- Simon Singh and Alyson Tobin
- 2007-8 ID4001 *Communicating and Teaching in Science*
- From 5 to 7 Science Schools
- Then ID4002 for arts and humanities

### UAS Aims

- [www.uas.ac.uk](http://www.uas.ac.uk)
- Providing key transferable skills to undergraduates which will be invaluable after graduation
- Providing teaching experience that encourages undergraduates to consider a career in teaching
- Supplying role models for pupils
- Giving support to teachers
- Encouraging a new generation of scientists, engineers and mathematicians

### Structure at St Andrews

- End semester two – invite participation, selection, checks
- Semester one – orientation week induction

Teachers  
Head Teachers  
Coordinators  
Widening Participation

Reflecting  
The Modern Classroom – Teach First  
“What if” case studies  
How to get the most out of the module

### Structure at St Andrews

- End semester two – invite participation, selection, checks
- Semester one – orientation week induction
- Attend schools weekly, reflections
- Tutorials and seminars
- Observer -> Assistant
- Project Proposal
  - Programme of Advanced Higher Experiments S6
  - How can we measure time? S3
  - Formation of Esters S4
  - The Scientific Method in the Classroom P6
  - Is Game Maker an Effective Teaching Tool for Basic Programming Skills and Group Work? S3
  - Maths Magic Show P5
  - Statistical methods using R S2

### Structure at St Andrews

- End semester two – invite participation, selection, checks
- Semester one – orientation week induction
- Attend schools weekly
- Tutorials and seminars
- Observer -> Assistant
- Project Proposal
- Observer -> Assistant -> Lead Activity in Special Project
- Talk on the placement
- Final Report

## The five pillars of CASE

1. Solid background
2. Cognitive conflict
3. Metacognition
4. Construction
5. Bridging



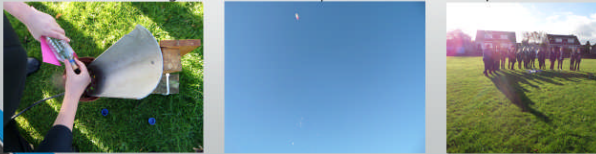
## Planning

- Previous ties to Sensation Science Centre
- The link to Madras
- Discussed with Link Teacher
- Contacted Sensation



## Evaluation

- During the PowerPoint presentation the pupils listened intently and answered the questions I posed to them.
- Throughout the lesson, I provided help to the pupils who I knew to usually struggle with their work, whilst they were filling out their worksheets.
- The pupils were keen to volunteer to help with the balloon and string demonstration.
- The rocket launching was successful as you can see from the photos below:

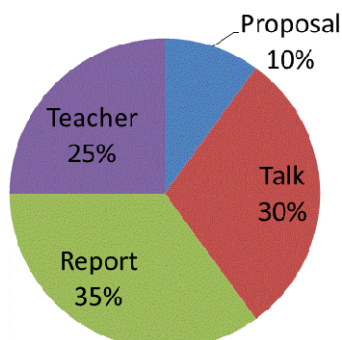


Joy C - 2013

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## Summative Assessment



## Selected Student Comments (1)

- I think this module has a unique draw for students, being an interdisciplinary module it allows many Schools to introduce their students to the idea of teaching and still give them credit for this.
- I also think that the module allows students to better understand their own core knowledge of science, by having to teach it to younger students and respond to their questions. To me there is no better revision than having to teach the subject.

## Selected Student Comments (2)

- What I particularly benefitted from was gaining hands on experience in the classroom with pupils from a variety of backgrounds with a vast breadth of needs.
- What I particularly enjoyed was getting to plan lessons on my own, with the freedom to carry out the class in whichever way I thought fit. It was great being able to try out different methods and strategies, but also being put on the spot and having to adapt the lesson plan when things weren't going as well as I envisaged.

*Hannah Dalgleish*

## Selected Student Comments (3)

- What I particularly benefitted from was getting the experience I needed for applying to postgraduate teaching courses next year. I was also able to confirm to myself that teaching was the career path that I wanted to follow, after having enjoyed every moment of my time spent in the classroom. At the end of my placement the pupils told me they wanted me to stay and so did I!
- What I found particularly challenging was the amount of organisation required for my special project. I took three classes and planning out each one of them and then getting everything done that I intended to do during each class was more difficult than teachers make it seem.

*Joy Cochrane*

## Survey Outcomes (N=23, 2013-14)

- Overall the module was excellent (1 - 5) – 1.4
- The module was well structured (1 - 5) – 1.6
- The workload was greater than for other modules at the same level (1 – 5) - 2.5

## Teacher Comments

The main benefit for us was definitely the motivational power on our pupils of having a young person in the room who was clearly enthusiastic about Science/Physics.

We also have materials developed by all three students who have been placed in our Physics department during the two years the course has been running, and these are valuable too.

The scheme seems to have been well received here as well; I think it does well because it has a clear focus and end result as opposed to an ad hoc arrangement

## Some schools we are working with

- |                          |                             |
|--------------------------|-----------------------------|
| • Arbroath               | • Kingbarns PS              |
| • Auchmuty (Glenrothes)  | • Kirkcaldy High            |
| • Bell Baxter (Cupar)    | • Kirkland (Methil)         |
| • Buckhaven              | • Lawhead PS                |
| • Canongate PS           | • Leuchars PS               |
| • Dunino PS              | • Madras (St Andrews)       |
| • Glenwood (Glenrothes)  | • Morgan (Dundee)           |
| • Greyfriars PS          | • St Leonards (St Andrews)  |
| • Grove (Broughty Ferry) | • Strathkinness PS          |
| • High School Dundee     | • Thornton PS               |
|                          | • Waid Academy (Anstruther) |

*54 students this year*

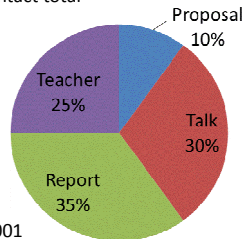
## Acknowledgements

- UAS
- School teachers & their pupils
- ID4001 University staff
- Our students

More info:- St. A. University Website, then search ID4001

## ID4001 at St Andrews Our implementation of the UAS

- End semester two – invite participation, selection, checks
- Semester one – orientation week induction
- Attend schools weekly – 25 hours contact total
- Tutorials and seminars
- Observer -> Assistant
- Project Proposal
- Assistant -> Lead Special Project
- Talk on the placement – 15 min
- Final Report – 2000 words



More info:- University Website, search ID4001