

Social Learning in Tutorial

Overview

Summary

The Department looked at two new tutorial models which can be thought of as a form of social learning.

Case 1: PH 352 Quantum Physics and Electromagnetism – In this class the students were split into four groups of approximately 30 students. In the electromagnetism tutorials the students were then sub-divided into groups of 5 to 6 students and then allocated problems to work through together. At the end of the tutorial the students worked through one of the solutions in front of all students explaining the key physics rather than going through the mathematical steps.

Case 2: PH 358 Condensed Matter Physics – In this class the lecturer allocated 10% of the class mark to the tutorials. Again the students were split into four groups of approximately 30 students. The students were set homework questions which were to be completed outside of the tutorial. At each tutorial the students would tick a sheet indicating which questions they had done and a portion of the 10 % mark would be awarded to the student irrespective of whether the student had achieved the correct answer or not. The idea was to encourage the students to attempt the questions without worrying about the correct answer. At the tutorial any student who had ticked that they had completed a question could be asked by the tutor to explain his or her solution to the rest of the group (this was an honesty check) and then the tutor would lead a discussion about the student's approach and the physics behind the problem.

Context

Department of Physics

Faculty of Science

Contact Details

Dr Nigel Langford

<http://www.strath.ac.uk/staff/langfordnigeldr/>

Themes

Themes

Rationale

To improve knowledge and understanding. The idea was to try to reinforce a student's understanding of the material without the student just blindly learning how to apply the physics of the problem.

Successes

In both classes there was an improved pass rate at the 1st attempt examination. An interesting side effect of the approach used for PH 352 was the fact that the quantum physics marks improved which was attributed to the fact that the students felt more comfortable with the electromagnetism material so that they could concentrate on the quantum physics element at exam time. (More data is available on request) We also saw a difference in group performance for PH 352 approach, depending in how active the tutors were. (Again, more data is available).

Lessons Learnt

There is a need to ensure that tutors are willing to drive the tutorial in a way that encourages students, and as such the Department needs to better train the tutors at the start of the class.

Challenges

Getting student buy-in was a challenge, as the approach was slightly different from their previous experience. For PH 358 the approach used caused an almost 50/50 split in the class over whether the students agreed with the approach or not. The lecturer had to deal with a significant amount of "noise" too.

Scalability

This was offered to classes of about 100 students. The only scalability issue relates to the number of students and the student / tutor ratio.

Suggestions for Transferability

This could be applied to any problem solving initiative be it mathematics type problems through to design problems.

Attachments

File

Modified 

No files shared here yet.