

## Post Graduate Certificate in Higher Education

Self evaluation form

Teacher's name Peter Rowlett

Observer's name Sharon Hutchings

Date 24/04/08

Venue ERD274

Evaluate the session alongside the pre-observation form

My summary of what happened in relation to aims, learning outcomes, teaching methods, learner needs, resource use, assessment and learner interaction and feedback.

This week's material was introduction to Integration by treating it as the reverse process to Differentiation. I was observed by another member of my PGCHE group. This was the first lecture since the coursework was handed in.

Two students attended. One is a mature student returning after a period in employment to complete a second degree who has covered the material before in that degree but does not remember it well. Call her A. The other is straight from school and has not covered the material before, having only GCSE mathematics. Call her B. They obtained two of the top marks in the coursework. They are highly capable but lack confidence.

The observer and I arrived 5 minutes before the hour and one student had already arrived. Shortly afterwards the other arrived. I introduced the observer but didn't go through the whole explanation since I had explained the observation idea and my taking the PGCHE to both students on prior occasions.

I handed out the coursework. Both students were pleased with their marks and one noticed that means they have passed the module already. I said this was not the way to look at it!

A few minutes later we decided no more students were likely to arrive and started. I began with an explanation of Xeno's paradox of Achilles and the tortoise to introduce the concept of an infinite sum. This will be more applicable next week when we do Integration as area under a curve, but was intended to introduce the concept of infinite sums totalling finite amounts and to provide a warm up bit of thinking.

I followed this with a reminder that speed is the derivative of distance, and we differentiate it again to get acceleration. Then we can reverse this process, anti-differentiating speed to get distance.

Following this I went through the deduction of the integral of  $x^2$  using logical reasoning.

Finally I showed the rules for differentiating polynomials, natural logarithm and simple exponential functions. The students attempted exercises.

Student A got on with the exercises fairly confidently. She asked a couple of questions and was capable. She noticed an error in the solutions.

Student B was much less confident. She said she didn't understand the material several times even though she did, she just didn't have the confidence in what she was doing. After a few exercises she grew more in confidence.

The students sat much further apart than usual, which meant I could follow one student or the other, but not both. I moved between the two and this seemed to work fairly well.

Student A finished the exercises much earlier than student B. I said she could read through next week's material or go early. I didn't want to go through the next week's material on the board because Student B was not ready, though I did not say so of course.

Student A read through next week's material, said it was familiar and she would wait for next week, and left early.

Student B continued through the exercises and by the end was completing them at an acceptable pace. She lacks confidence. I told her she did understand the material but just hadn't practised enough yet, as she was with differentiation.

Just after the session the observer told Student B she said "I don't understand that" too much and that she clearly was capable and needed to be more confident. I agreed. She also said the student would be fine in the end test. I agree with this also, but am nervous of setting a sense of complacency, particularly as the student has already passed the module on the coursework alone but could achieve an impressive mark. The student, unprompted, said she would be sure to do plenty of revision and I agreed this was a good idea.

How did it compare with the timed session?

It felt approximately right though I didn't look at the time.

What went well in the session?

I am generally pleased with the way the session went.

I felt the explanation went well. The students engaged with the concepts expressed through the (richer) Xeno paradox metaphor much more than they had with the (more abstract) introduction to differentiation in terms of tangents to curves.

The problems portion of the class was much as usual. This went well with the students working well through the problems.

What could have been improved in the session?

Some more (optional) problems might have been useful. One student finished the problems sooner than the other and could have practised on some optional problems. I did not want to move on through the material (to next week's lecture) and leave the other student behind. The second student might have benefited from having optional problems to work on in her own time as she understood the methods and was able to apply them well but lacked confidence.

Towards the middle/end of the class the students became a little more restless and being able to break the on the board material into two halves might have made for a more varied learning experience, but the material was not suitable for this.

Possible action points and strategies for consideration at feedback meeting.

Does it matter if I give someone a mathematical tool to apply to scientific problems in their area and they don't understand how that tool is derived?