

# **How can I improve my role as a facilitator of learning in my teaching of Physics to Leaving Cert students?**

## **Introduction**

The focus of this work was to look at myself as a teacher and to investigate some aspect of my teaching that could be improved. Specifically, I wanted to see if I could improve my practice as an educator by use an authoring tool to design and publish Web based curriculum material. Therefore the purpose of the assignment was not to use an authoring tool to develop web based curriculum material, but to improve my practice by designing and using this web based material. Not to use technology because it is there, but to use it to improve my practice. In order to do this I had to be the subject of my initial research. It was necessary to examine and identify my own values as an educator, to examine my current methodologies, to think about my role as both teacher and learner in the classroom, to reflect on some learning theories and their relevance to my teaching and values as a teacher, to learn how to use an authoring tool, to use the authoring tool to develop a learning environment which I could stand over as being educationally sound and an improvement on my current practice, and ultimately to evaluate the effectiveness of my actions.

## **Action Research**

I carried out my work using the Action Research approach. As the term suggests this involves an investigation in which the researcher, i.e. the teacher, does something about what he or she finds. This is praxis, i.e. doing something that gives rise to knowledge about teaching and learning. This is different to practice, which involves the doing but not the reasons for doing. "Action Research is a form of self-reflective inquiry", Kemmis, (cited in Hopkins, 1985). It "attempts to improve educational practise by groups of participants by means of their own practical actions and by means of their own reflection upon the effects of those actions", Ebbutt (cited in Hopkins, 1985). It is most appropriate for participants who recognise the existence of shortcomings in their educational activities and who would like to adopt some initial stance in regard to the problem, formulate a plan, carry out an intervention, evaluate the outcomes and develop further strategies in an iterative fashion, (Hopkins 1993). The participants in Action Research include the teacher, other teachers/colleagues/educators and the students. The involvement and contributions of all the participants are crucial. One of the key characteristics of Action Research is systematic inquiry made public.

Action Research is probably carried out, informally, all the time by teachers, but rarely do we take time to evaluate our teaching formally. We usually know what worked and what did not, but how often do we try to find out why and how we could improve how we teach. The teaching profession has tended to promote teaching in isolation. Surely there must be a wealth of information that teachers could share from their experiences that would enrich both the teaching and learning processes.

## Action Research Planner

### 1. What is my research focus? What am I concerned about? What do I want to improve?

Before starting to develop anything any course material I had to find a focus for my Action Research. This meant thinking about what aspect of my practice that I wanted to investigate. In particular I had to think about something that I was concerned about and that I wanted to improve. I found this one of the most difficult parts of the process. Initially I approached this question from the wrong end, i.e. how I could learn to use an online tool to teach, rather than how I could improve my teaching by using an online learning tool. There is a very fundamental difference between these two objectives. The second forms the basis for Action Research and focuses on all the participants in the teaching/learning process. The first focuses only on me as the learner and the outcome may have little to do with bringing about any improvement in my teaching.

After a few false starts, part of the learning process for me, I formulated my research question: *How can I improve my role as a facilitator of learning in my teaching of Physics to Leaving Cert students?* I want to promote student centred learning where I provide the scaffolding for the students to construct their own learning. I chose to focus on some area of my theory classes where I felt I could improve the learning experience of my students and myself by using an online learning tool. I have previously tried to encourage my students to access the web for extra material to enrich their learning, but with little success as I think that they need some direction in finding the relevant information.

### 2. Why have I chosen this area of focus? What are my values?

To answer this question I had to think out and formalise my own values as an educator. This I also found hard to do, as I had never actually put these in writing. Through the use of Journal entries I forced myself to put my thoughts and values in writing. This was difficult to do because as teachers, we have been encouraged to be autonomous. There was a certain feeling of vulnerability in putting my values into writing for public viewing and discussion. However, after the initial 'shyness' I found that the journal entries provided the best resource for self-reflection and feedback. Reading back over my entries I can see the progression in my thinking from quite confused to an improvement in my understanding of what I was doing – in terms of my reflections on my practice and in the development of my own learning. I passed through a few cycles of planning, acting, reflecting and replanning before coming to my final area of focus. The regular feedback from Margaret was encouragement to continue reflecting and writing.

The following is a copy of my journal entry describing my values and my rationale as a teacher:

*Traditional teaching methods and methodology place the teacher in the dominant role of instructor, information provider and often performer in a classroom. I find more and more that this role is becoming difficult and inadequate. How can I compete with the vast range of far superior presentation methods available to students in the media, TV, etc.? How can I keep up with all the 'knowledge' that is available. How can I provide for the many interest and ability levels of my students? In the past this was always difficult as I, like other teachers, was limited by the facilities that I had in my classroom. Now it should be easier. There is a vast store of resources available by way of technology and in particular the World Wide Web. But how can I use them effectively?*

*As a teacher of Physics to girls for 20 years, I have been 'fighting' the traditional view that physics was a 'boy's' subject and to be a girl and do physics you must be very intelligent, (and probably a bit strange!). In fact, 20 years ago it was quite unusual to find Physics on the curriculum in a girl's school. In the early days only the most intelligent students in my school chose to do physics - this was roughly 6% of a particular class. My argument has always been that if you want to do physics, that if you work at it, it should not be any more difficult than any other subject. The numbers choosing to do physics have risen over the years to on average 20% of a class group choosing it with a bumper 33% of fifth years this year. Now the class is a mixture of abilities. I believe that brighter students can help weaker students and in doing so can improve their own learning. I like to encourage the students to learn from each other. In reality this is possible, using my current methodologies, only during practical classes. In these classes it is often the less bright students who are better at 'putting the apparatus together', while the better students understand the theory behind the practical.*

*As a teacher of Physics, without a degree in Physics, I have always been aware of the difficulties of students, mainly because I would have encountered them a few nights before myself. From the beginning I was very aware that many of the students sitting in front of me were far more intelligent than I. Therefore I have always been learning from them. This is an aspect of teaching that I really value. I feel that it 'keeps me on my toes' always, hopefully keeps me in touch with the things that students find difficult and the things that most interest the students. It also means that while the curriculum changes little from year to year, teaching never becomes routine.*

*I put a great emphasis on learning by doing. I also think that if something is made relevant to everyday experience that it is easier to learn. As the age gap widens between my students and I, I am more conscious that the gap is widening between what I consider and what they consider to be relevant to their everyday experiences. Therefore I would like to see myself moving more into the role of facilitator and a guide of their learning processes or as the scaffolding for learning that Vygotsky describes.*

*The ultimate aim of most of my students is to get as high a grade as they can in Physics in the Leaving Cert. I believe that this is only possible if they have been motivated enough to develop an interest in some parts of the physics course, if they feel that each has a valuable contribution to make to the class and they feel confident in their own ability. I firmly believe that every student can learn from every other student and that as a teacher I am always learning with my students.*

*I need constant feedback from my students - I believe that this is the best way of assessing my effectiveness as a teacher. I welcome this feedback in the form of questions, comments, suggestions, as well as the conventional student performance in exams. Unfortunately, as class sizes get bigger communication between individuals, student and student and student and teacher, gets more difficult. Often the quieter student is more reluctant to speak up and yet her contribution is as valuable as anyone else's. This is something that I have become very aware of as Physics has become a more accepted choice for the girls in my school and therefore the class sizes have increased. While the informality of practical classes gives lots of scope for collaborative learning and communication between the students and students and me, it is much more difficult to put into practice in theory classes.*

*There are two things that I would like to incorporate into my pedagogy: (i) I would like to encourage the use of the World Wide Web by my students and (ii) I would like to promote more collaborative learning both between the students and with me.*

*I would like to look at the use of the World Wide Web for two purposes: (i) as a resource to provide information/graphics/ animations for curriculum topics for which there are no practicals or demonstrations possible in a usual classroom/lab situation, (ii) as a resource to provide links to information relating to the curriculum which is topical, up to date or which a student may have an interest in pursuing. This could be particularly relevant for the new Science, Technology and Society component of the Leaving Cert Physics curriculum.*

### **3. What am I going to do about it?**

I set out to develop courseware for teaching some topics on the Leaving Cert course for which there were no classroom demonstrations available. I decided to concentrate on Electrons and The Nucleus. I then put this material onto WebCT.

Setting up the course in WebCT was the difficult part of the task for me, the instructor. As can be seen from my Journal entries I encountered many technical problems, but managed to work most of them out, with some guidance and encouragement from my educator colleagues. The development of the courseware was technically the easier part of the work. To encourage the use of the World Wide Web by the students I included links to relevant sites that had animations, graphics, photos, descriptions, information which I could not access during a normal class-teaching period. I also developed some Flash animations that I hoped would compliment the courseware. However, as I could not upload them into my WebCT modules I planned to place these onto my webpage and provide links from the WebCT modules to them.

### **4. What kind of evidence will I need to make a judgement on my effectiveness?**

I chose WebCT because it provided a platform for me to change my practice and it has many facilities that I thought would be useful to judge the effectiveness of my changed practice.

- The Chat Room facilities, which include recording of conversations, could encourage collaborative learning. The questions that students ask me and ask each

other, both in chat rooms and in class, will be important indicators of their understanding and of their motivation and of the use they are making of the course material, including links to the World Wide Web.

- WebCT tracks the use of its various facilities – course material, chat rooms, assignments, and quizzes – by the students. Therefore I should be able to monitor the number of times and the length of time each student accesses different parts of the course.
- The Quiz facility in WebCT allows me to put tests online that can be automatically marked and the results for each student logged. The Quiz can be released when I choose and could be a useful test of learning, understanding and application of knowledge. What is tested depends on how I structure the test.

Other sources of evidence to show that what I am doing is having an impact could include:

- Discussion with the students after using the online environment about their opinions on the effectiveness of learning in this new way.
- My past records and knowledge of individual students could be used to compare their motivation, participation, understanding, application, test results before and after using the online learning environment.
- Opinions of colleagues and other educators on what they think of my course, could be sought.

## **1. Act and Gather Data**

The first step was to set up my WebCT course and to register all my students on it. This was not as straightforward as I expected.

As we do not have access to a computer during class time, I prepared a handout for my students with instructions for accessing the course online. Since an online learning environment was a completely new concept to them I decided to introduce them to the idea by encouraging them to use the Chat Rooms, thinking they might be familiar with these. I also informed them that their chat would be logged. That evening I logged into the Chat Room at the same time as one of the students. However, I could not get her to 'chat' with me. The same student over the next few weeks constantly visited the chat rooms but did not arrange with anyone else to visit at the same time. Either the students are not as familiar with chat room use as I thought or they need some structure to encourage them to use them. This is something that I would need to investigate further.

I put together my online course. I spent quite a while searching the web for suitable links to include. I then uploaded the course material and told the students. Quite a few more accessed these pages than the Chat Rooms. However, as the course material was not being covered at that time in class it was not possible to assess its effectiveness.

I was still disappointed with the level of access to the course by the students so I

informed them that their next assignment would be posted online and that they would have to access it and print it out within the next week. This they all did. I had anticipated problems due to the very slow download time that I had encountered, but they did not report this as a problem to me.

The last thing that I put into my online course was a quiz.

I also created some Flash animations to compliment some of my course material but did not get to put them online so that the students could access them.

## **2. Evaluation of Effectiveness**

Due to the time constraint I did not have a chance to gather much data from which I could extract evidence to assess the impact of the online learning course I devised. Therefore I have not completed an Action Research cycle and cannot determine whether or not I have brought about any improvement in my practice, whether I have improved my role as a facilitator of learning in my teaching of Physics to Leaving Cert students. One exception to this was my aspiration to encourage quieter students to participate. The one student who accessed the online course and Chat Rooms more than anyone else was one of the quietest students in the class.

In terms of my own learning, I have developed and researched the use of an online learning environment. I feel that I have added another facet to my practice. While doing this work I developed a much more positive attitude to WebCT as a learning environment as I became more familiar with its facilities.

I found that I made assumptions about my students that were not always correct. As this is a totally new area for my students I would need to spend some more time thinking about how I could best encourage them to integrate its use into their learning and my teaching. I haven't put enough thought into how to facilitate their becoming familiar with this environment. I tended to think that the implementation of the changes in my practice would have the greatest impact on me and that for the students the main change would be in their learning experience. I took it for granted that they were comfortable users of computers and the Internet. Therefore to improve my role as a facilitator of learning in my teaching of physics to Leaving Cert students I need to be careful not to make assumptions about facilities and skills that my students have acquired outside my classroom. Liaison with a computer studies teacher might be helpful or even access to the computer lab, for a few physics class sessions, to introduce the computer skills necessary for the students to use an online learning environment.

After my presentation of this work to my educator colleagues there was a suggestion that the students could help develop the course material, for example, they might find web links which they think could be useful to the class. I think that this would be a very positive outcome and would certainly show whether they were being motivated to use the web and to find appropriate material. Their findings would possibly be better than mine for the class as they would be looking at the material as first time learners and through the same eyes as their peers. This would also provide some feedback to me with regard to

how well I was facilitating their learning and whether they were taking any responsibility for their own learning.

## **Conclusions**

As a teacher involved in Action Research, I found myself learning by doing, creating, thinking, collaborating with colleagues, and getting feedback. These are some of the key values that I hold in relation to learning and teaching. I probably place more emphasis on them for the students but realise that they are as important for me if I am to be a better, more effective teacher. Action research is a good exercise for teachers as we tend to 'live in glass houses' when in our classrooms. We can learn a lot about teaching and learning by collaborating with the whole learning community – students and other educators.

The opportunity to do Action Research gave me a chance to think about how improvement in my teaching might be brought about by integrating some tools of technology into my teaching and my learning processes and those of my students. As more and more of these tools become available teachers will have to think about their practice and make decisions about whether they can improve their teaching with or without these new tools.

As students become ever more familiar with the latest technologies, the gap between them and their teachers could become enormous if teachers do not think about their practice and 'learn' new ways of teaching. It is important that teachers do not use technology just because it is there. They must have a pedagogic reason for using it. Reflection on practice will become important as more and more 'tools' become available. Action Research allows teachers to investigate the methods, materials and tools most suited to themselves and to their classes.

I believe that the integration of new technological tools into the teaching and learning processes will require a shift in emphasis in classes from the traditional role of the teacher as 'information provider' to the teacher as facilitator of learning. The teacher will form the 'scaffolding' of Vygotsky's constructivist approach to learning. Students' learning can be customised and paced by themselves. There will be a change in student and teacher roles where the teacher becomes less dominant and fades to facilitator and the student constructs his/her own learning. Students will be prepared for more collaborative and independent work. There will always be a need for the teacher, as the wealth of knowledge gained by experience is impossible to replace in order to keep learning on the right track.

## **My Journal Entries and Replies**

**Message no. 7: posted by Anne Marie Mee (mee2) on Thu Nov 01, 2001 20:33**

**Subject: Week 1**

Visited Margaret today to discuss dissertation. Have more or less decided on doing a WebQuest for the assignment for Network Management. The topic for the WebQuest and the level aimed at I am not yet sure of....

The WebQuest could be put on WebCT and/or my website. The website has to be designed for the GUI course anyway.

My dissertation could be centred on the use of the WebQuest by students. This could be monitored in WebCT. A chat room could also be set up in WebCT to record discussion between students and therefore provide data for qualitative analysis and/or improvement to the WebQuest. The learning of the chosen topic by students using WebQuest could then be compared with that of students learning/taught in the traditional way. The use of a WebQuest for learning could be examined regarding the educational theories it might support.

I have searched the Web for some articles on WebQuest design, etc. In particular articles written by Bernie Dodge.

Now to decide on a topic for the WebQuest ..... look for resources on the Web ..... maybe look at Particle Physics as the course material could be boring with no possible practical work..... Do I really want to create for senior cycle students???

**Message no. 11: [Branch from no. 7] posted by Margaret Farren (ca572) on Mon Nov 05, 2001 22:02**

**Subject: re: Week 1**

Ann Marie,

Well done - you are the first to post your journal!

It looks as if you have found a focus for the assignment and it may build towards your dissertation. An interesting shift from earlier today - from your idea of designing a Webquest and now moving into the student design of Webquest - is this linked to your standards/criteria/values of what and how you want to teach and others to learn using WebQuests?

If you go to Content module and into Teachnet project (session 5) and Teachers Discovering computers, you will find WebQuests resources under curriculum links.

The topic and level you choose may be linked to the first question in Action Research cycle - What do you want to improve?

Anyway, I am sure you will work this out. Talk to you soon.

Margaret

**Message no. 24: posted by Anne Marie Mee (mee2) on Sat Nov 10, 2001 23:38**

**Subject: Week 2**

I have spent most of this week reading about WebQuests -what they are, their design, lots of examples. I have decided that a webquest is not for me. I don't think

that the students that will be 'available' to me for testing would be motivated by a webquest.

Sorry Margaret! That was a hard decision to make, as there was a certain peace of mind in having decided on an assignment topic. So I've been doing more thinking

about what would be most useful to me in my teaching. I've even revisited the idea of tackling Flash

again. However, I'm also keen to learn to use another ICT tool.

I now think that I will develop a course on WEbCT for one of my senior classes. I think that this could be a useful resource for periods of my absence, e.g. in-service, illness, doing exams!,etc., communication with and between students, etc.

**Message no. 27: [Branch from no. 24] posted by Margaret Farren (ca572) on Mon Nov 12, 2001 19:14**

**Subject: re: Week 2**

Ann Marie,

All part of the process. I am not sure why you decided that a WebQuest would not be suitable for your group? You have access to WebCT so yes, you could develop an online course and include different multimedia elements and use different features of WebCT - this will depend on the type of learning you want to promote. I have included the Action Research Planner (below) which should hopefully help as you start working on the assignment. Margaret

What is your research focus?

Why have you chosen this area of focus?

What is happening now before your intervention? Which criteria/standards of judgement/values will you use to explain what you are doing e.g. what is your approach to teaching and learning with or through ICT? What records can you keep to show what you are doing? - start with the weekly journal.

What kind of evidence can you produce to show that what you are doing is having an impact? Do you have evidence to show that you have done what you say you have done? For example, how does the courseware relate to your own standards of judgement/values? You are explaining what you are doing and can you justify what you are doing? For example, is there a particular learning theory that you draw upon?

Act and gather data. This would be your weekly journal reflections along with the work in progress. Evaluation of effectiveness. Have you done what you set out to do?

Modification of concerns, ideas and actions in the light of evaluation. Has your enquiry moved forward due to your own weekly reflections and feedback received on your reflections?

Submission of descriptions and explanations of my learning in the educational enquiry, 'How do I improve my practice?' to a validation group. This would be in the form of the final presentations. Can you explain and justify what you have done to the group?

**Message no. 71: posted by Anne Marie Mee (mee2) on Wed Nov 21, 2001 21:05**

**Subject: Third entry in the right place**

**Message no. 48: Posted by Anne Marie Mee (mee2) Fri**

Nov 23, 2001 00:32

Margaret,

This is my third entry and I hope I'm beginning to make some sense. I've picked a definite area to concentrate on. Now the fun starts with implementing and evaluating it!!

**Attachment**

At last I've made time to think through what exactly I'm going to do for this assignment. I've forced myself to narrow down the subject area that I'm going to concern myself with.

What am I concerned about?/What do I want to improve?

There is a new option on the leaving cert physics course, called particle physics. It is new material to me too. At a recent in-service the coordinator indicated that there appeared to be less than 20% of physics teachers planning to teach this option. The main reasons – probably the teachers' lack of familiarity with the material, also the fact that there were no practicals/demonstrations suitable for the lab. Therefore it might be perceived as 'boring'.

I have also been interested in encouraging my students to access the web for back-up material, etc. but feel that this would be of greater benefit if it could be directed and also monitored.

What am I going to do about it?

I am hoping to be able to develop a module to teach the particle physics option for Leaving Cert and to put it in WebCT. Within the course material I will include links to relevant websites and maybe try to develop some Flash animations to explain some concepts.

What evidence will I need to be able to make a judgement on my effectiveness?

This is new subject matter for me and a new approach to teaching. I am trying to promote student centred learning where I am the facilitator or provide the scaffolding... constructivism. I am also hoping that some collaborative learning will take place via the chat rooms in WebCT..... both between students and between students and me. This can be monitored in WebCT. I can *monitor* the number of times that each student accesses the course.

The *questions* that students ask me and each other, both in chat rooms and in class, will be important indicators of their understanding and their motivation.

*My past records* and knowledge of individual students could be used to compare their motivation/participation/understanding/application.

*A test* at the end of a reasonable time - testing learning, understanding and application of knowledge.

*Discussion* with the students afterwards about their opinions on the effectiveness of learning in this new way.

I could also ask a *colleague to assess* my course from a teacher's perspective.

#### Act and Gather Data

Now I must put the course together. To date I have spent time searching the web for suitable website links. I have also been learning the subject matter myself. My course will contain the basic elements needed for this topic, hopefully presented in a way that will motivate the students to learn better and to look for more information. I hope that one of the outcomes will be that the more motivated and more able students will have an opportunity to delve further into the topic. This is difficult to incorporate into a traditional class where there are many abilities and interests..... the norm is to pitch the class to the middle.

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**Message no. 51: posted by Anne Marie Mee (mee2) on Sat Nov 24, 2001 18:03**  
**Subject: Fourth entry**

Margaret,

I seem not to have posted my third entry to the development journal - it is in the general discussion mail. I have been trying to learn how to use some of the features of WebCT. It is taking quite a while. I have taken the advice of Murray Goldberg ("Message from Murray Modest Beginnings",

www.otlnewsletter.com) to 'begin modestly' by making a syllabus, course calendar, assignments online, provide links to other places on the web for further reading, make sure communication are available and encourage the students to use them and add the class notes last. My next step is to add students and encourage them to use webct.

Anne Marie

**Message no. 56: [Branch from no. 51] posted by Margaret Farren (ca572) on Sun Nov 25, 2001 12:18**  
**Subject: re: Fourth entry**

Hi Ann Marie.

Agree, all these tools take time. I suppose rather than trying to get to grips with all of them, it is enough to choose one as you are doing.

Chris has mentioned similar points about using Blackboard and I think what my reply is also relevant to you.

Use this term to get to grips with Blackboard (WebCT) explore the different features and decide which ones are most useful - this will depend on what you are trying to do. Think about the pedagogy that you could promote through this type of environment. What are your own standards/values - how would you judge whether this environment was educational? Hope this helps.

Margaret

**Message no. 72: posted by Anne Marie Mee (mee2) on Wed Nov 28, 2001 21:08**

**Subject: Fifth entry**

Margaret,

Thanks for the opportunity to talk to Jack Whitehead. I am about to sit down and think about his advice and will make an entry later. I just moved my second last entry from main into the development journal as I posted it to the wrong place.

Anne Marie

**Message no. 76: [Branch from no. 71] posted by Margaret Farren (ca572) on Thu Nov 29, 2001 14:05**

**Subject: re: Third entry in the right place**

Ann Marie,

Looks as if you are working through the AR cycle. You want to promote student centered learning and collaboration, using online learning. The question now is how do you intend to do that? Again the focus will be on the learning. The difficulty of getting at motivation was highlighted during the link up on Tuesday night.

Margaret

**Message no. 87: posted by Anne Marie Mee (mee2) on Sat Dec 01, 2001 13:30**

**Subject: failed collaborative work on webct**

Hi Margaret,

Olivia, Mary and Anne Marie have been trying to:

1. Upload files with graphics within .doc and.html files. They upload with no graphics, even when we upload the graphics separately. We notice that Peter has uploaded powerpoint slides to your webct ..... could you tell us how or who might help us?
2. Having student registration/passwords/logon to enter webct is proving impososible. We have figured how can do this for students self registering .... but this is not satisfactory. Any ideas??
3. Having difficulty with chat room development. A student and instructor have tried the chat room and both get message 'connection is broken try later'.

That's all for now !!

Anne Marie ,Olivia, Mary

Thats

**Message no. 101: posted by Anne Marie Mee (meea2) on Sat Dec 01, 2001 23:37**

**Subject: Slow development**

Hi Margaret,

Since talking with Jack Whitehead on Tuesday I've been trying to get my head around this action research thing. I definitely had the wrong emphasis. I was concentrating on trying to learn to use an online tool to deliver a course, set up chat rooms, get students to use a network facility, learn how to use the various tools in WEbCt to monitor students, etc.

I should have been thinking more about my values and reasons for teaching things the way I do, what I consider to be key factors in my approach to teaching a

particular class of students or particular material, etc. How could I improve some area(s)of my teaching?

What do I expect my students to learn from my teaching?

How can know that I am achieving my desired outcomes?

What can I do to keep my classes interesting, relevant, up to date ..... Am I passing on anything useful to my students? Am I utilising the experience I have gained over the years to make the most of my teaching?

So, what are the things that I value most? Will return tomorrow

Anne Marie

**Message no. 102: posted by Anne Marie Mee (meea2) on Mon Dec 03, 2001 00:42**

**Subject: My focus and values**

Margaret,

Some of my thoughts, hopefully not too disjointed. Am I on the right track?

I have been trying to do some more things with webct and am coming to the conclusion that it might be an idea to put any Flash, graphics, etc. onto a website and createlinks from webct to there. Enough for today.

Anne Marie

**Attachment**

What are my values or standards of judgement?

Traditional teaching methods and methodology place the teacher in the dominant role of instructor, information provider and often performer in a classroom. I find more and more that this role is becoming difficult and inadequate. How can I compete with the vast range of far superior presentation methods available to students in the media, TV, etc.? How can I keep up with all the 'knowledge' that is available. How can I provide for the many interest and ability levels of my students? In the past this was always difficult as I, like other teachers, was limited by the facilities that I had in my classroom. Now it should be easier. There is a vast store of resources available by way of technology and in particular the world wide web. But how can I use them effectively?

As a teacher of Physics to girls for 20 years, I have been 'fighting' the traditional view that physics was a 'boy's' subject and to be a girl and do physics you must be very intelligent, (and probably a bit strange!). In fact, 20 years ago it was quite unusual to find Physics on the curriculum in a girls school. In the early days only the most intelligent students in my school chose to do physics - this was roughly 6% of a particular class. My argument has always been that if you want to do physics, that if you work at it, it should not be any more difficult than any other subject. The numbers choosing to do physics have risen over the years to on average 20% of a class group choosing it with a bumper 33% of fifth years this year. Now the class is a mixture of abilities. I believe that brighter students can help weaker students and in doing so can improve their own learning. I like to encourage the students to learn from each other. In reality this is possible, using my current methodologies, only during practical classes. In these classes it is often the less bright students who are better at 'putting the apparatus together', while the better students understand the theory behind the practical.

As a teacher of Physics, without a degree in Physics, I have always been aware of the difficulties of students, mainly because I would have encountered them a few nights before myself. From the beginning I was very aware that many of the students sitting in front of me were far more intelligent than I. Therefore I have always been learning from them. This is an aspect of teaching that I really value. I feel that it 'keeps me on my toes' always, hopefully keeps me in touch with the things that students find difficult and the things that most interest the students. It also means that while the curriculum changes little from year to year teaching never becomes routine.

I put a great emphasis on learning by doing. I also think that if something is made relevant to everyday experience that it is easier to learn. As the age gap widens between my students and I, I am more conscious that the gap is widening between what I consider and what they consider to be relevant to their everyday experiences. Therefore I would like to see myself moving more into the role of facilitator and a guide of their learning processes or as the scaffolding for learning that Vygotsky describes.

The ultimate aim of most of my students is to get as high a grade as they can in Physics in the Leaving Cert. I believe that this is only possible if they have been motivated enough to develop an interest in some parts of the physics course, if they feel that each has a valuable contribution to make to the class and they feel confident in their own ability. I firmly believe that every student can learn from every other student and that as a teacher I am always learning with my students.

I need constant feedback from my students - I believe that this is the best way of assessing my effectiveness as a teacher. I welcome this feedback in the form of questions, comments,

suggestions, as well as the conventional student performance in exams. Unfortunately, as class sizes get bigger communication between individuals, student and student and student and teacher, gets more difficult. Often the quieter student is more reluctant to speak up and yet their contribution is as valuable as anyone else's. This is something that I have become very aware of as Physics has become a more accepted choice for the girls in my school and therefore the class sizes have increased. While the informality of practical classes gives lots of scope for collaborative learning and communication between the students and students and me, it is much more difficult to put into practice in theory classes.

I find it very difficult to put these values into words, but it has made me focus on what it is that makes me the kind of teacher that I am. I would love to ask my students to answer the same question about me. I would hope that there might be some overlap!

So how do I improve my practice? How can I improve my role as a facilitator of learning in my teaching of Physics to Leaving Cert students?

I would like to focus on the area of my theory classes as I feel that this is where I could make the greatest improvements. I would like to make myself more of a facilitator for learning. There are two things that I would like to incorporate into my pedagogy: (i) I would like to encourage of the use of the world wide web by my students and (ii) I would like to promote more collaborative learning both between the students and with me. I would like to look at the use of the world wide web for two purposes: (i) as a resource to provide information/graphics/ animations for curriculum topics for which there are no practicals or demonstrations possible in a usual classroom/lab situation, (ii) as a resource to provide links to information relating to the curriculum which is topical, up to date or which a student may have an interest in pursuing. This could be particularly relevant for the new Science, Technology and Society component of the Leaving Cert Physics curriculum.

**Message no. 106: [Branch from no. 101] posted by Margaret Farren (ca572) on Wed Dec 05, 2001 12:56**

**Subject: re: Slow development**

Ann Marie,

Brilliant - you got it..notice the way you say - 'How I could improve?' 'What can I do?' 'How can I know?' – all linking to you own standards/values.

Margaret

**Message no. 117: posted by Anne Marie Mee (mee2) on Fri Dec 07, 2001 23:16**

**Subject: Progress with WebCT**

Margaret,

Visited Denis Cahalane with Olivia in Computer Services today and he went through how to enter students on WebCT. Its quite cumbersome.

1.Important to have a .txt file set up, e.g. in Word, with the list of students: First Name,Last

Name, User ID, Password. (Note commas between each heading). The first line of the list should be the headings, i.e. field names, then each student entry should be on a separate

line.

2. >Manage Students .... Import Student Data .... Go ... >(Add Students screen appears)>, etc., etc....

These details are in Help ... Manage Students .....

Importing student data from a text file

The students now have to create their own < MyWebCT >, as follows:

1. Type '<http://v35trials.webct.com>' in the address bar
2. Click 'Create MyWebCT' 3. Enter the required details in the fields < 1st Name, Last Name, WebCT ID, Password, Confirm Password >... click < Continue >
4. Enter their < Username > and < Password > again
5. Click < OK > 6. Click < Add Course > 7. Click on the course of the teacher, i.e. my course 8. Enter and < Password > again.

I decided that this would be too confusing for my students to do themselves, so I did this for each of them. I feel that if they have any problems/difficulty in getting into WebCT that they might be put off and not use it. Now when the log on they only have to click on to 'Log On to MyWebCT.

I have briefly discussed the use of this online facility and they were enthusiastic about wanting to use it, especially the chat rooms. However, when I told them that all the chat would be recorded and maybe should be limited loosely to discussion of physics problems, etc. they were less enthusiastic. They seemed to like the idea that they might be able to ask me questions in a chat room.

So now I will give them their Usernames and Passwords and have decided to only have the chat rooms available to them for the first few days. I should have evidence about their use of the chat rooms and what they chat about.

I've been working on some files to upload and also searching for suitable websites which provide links to material, e.g. animations, Java Applets, which provide backup material for the classes I'm preparing. I have also been trying to develop a few animations with Flash myself, as I had difficulty finding suitable illustrations for some course material. This is to support my belief that learning is facilitated by doing/seeing/visualising.

Enough for now, I've been rambling on.

Anne Marie

P.S. Maybe the start of this should be in

the Technical Journal??

**Message no. 122: posted by Anne Marie Mee (mee2) on Sat Dec 08, 2001 21:16**  
**Subject: WebCT difficulties**

Margaret,

Everything seems to be very difficult to do in WebCT or else its me. So far I've registered all my students set up my course and uploaded some files, but these are without diagrams/active URL links/Flash movies. I have spent some time experimenting with these but so far with no success. Any suggestions?

I have decided to let my students access my course as it stands. I will encourage them to use the chat rooms to discuss 'physics' problems! By examining their 'chat' I should be able to have an idea of what their problems might be. This will also give me an indication of their willingness to work collaboratively online. If they 'chat' with me then I may also be able to facilitate their individual learning. This is a start. Hopefully when I iron out some of the technical problems with

WebCT I will be able to examine their use of my online course. I would also like to set up a test(Quiz) and look at how it can be administered.

Anne Marie

**Message no. 127: [Branch from no. 122] posted by Margaret Farren (ca572) on Mon Dec 10, 2001 16:54**  
**Subject: re: WebCT difficulties**

Ann Marie,

You say "Everything seems to be very difficult to do in WebCT or else its me. So far I've registered all my students set up my course and uploaded some files, but these are without diagrams/active URL links/Flash movies. I have spent some time experimenting with these but so far with no success. Any suggestions?"

It is just starting off problems - not always as intuitive as we would like. These features work on my

WebCT course but I am sure they did not work first time round. If you want to call to the office around 6pm tomorrow -before class - then we can work through it.

Glad you got registered on the DCU server so you know that the course will not suddenly disappear.

Margaret

**Message no. 135: [Branch from no. 131] posted by Anne Marie Mee (mee2) on Mon Dec 10, 2001 19:53**  
**Subject: re: Progress with WebCT**

Margaret,

No I haven't registered my students on the DCU WebCT Server. We both registered them on the trial server. I had a reply from them today telling me to get in touch with Colleen Malloy. I have just emailed her and asked for an extension.

I gave my students their user names and passwords today. I prepared a handout for them on how they will access my WebCT course. I suggested that they might arrange a time between a group of them to use the chat rooms. There was definitely an air of anticipation ..... whether this was about using chat rooms or trying an online learning environment. I have asked for feedback.

So, I suppose this is my first step in acting as facilitator of their learning and encouraging collaborative work,(in the broadest sense). I can judge my effectiveness by checking how many access the course and from their feedback.

I have uploaded some course material, with some links to relevant sites. However, as there are spaces where there should be diagrams I am not confident that I am facilitating learning as well as I would like.

Now, I want to work on setting a test in WebCT.

Anne Marie

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**Message no. 161:**

**Posted by Anne Marie Mee (mee2)**

**Sat Dec 29, 2001 19:28**

Margaret,

Its a while since I've posted an entry. I will attempt to summarise what I have done since 10th December. My last entry was just after composing and uploading a quiz to webct. I found that the students were not accessing WebCT and so I decided to encourage them by placing an

assignment that they had to do onto WebCT. This required my learning to use another facility of WebCT. This proved not to be difficult. I then informed the students that they had to access the course and download the assignment. In the meantime I tried to do so myself, found that it took an awfully long time and I decided that the students would not have waited. However, on

the next Monday they reported no problems and had all managed to get a copy of the assignment!

We also started to cover some of the course material which I had put onto WebCT and I noticed that a few more students were logging on to access this. Still no more using the Chat Rooms.

I ran out of time to properly use the online course with my students and as this is a totally new area for them I would need to spend some more time thinking about how I could best encourage them to integrate its use into their learning and my teaching. I haven't put enough thought into

how to facilitate their becoming familiar with this environment. I tended to think that the implementation of the changes in my practice would have the greatest impact on me and that for the students the main change would be in their learning experience. I took it for granted that they were comfortable users of computers and the Internet. Therefore to improve my role as a facilitator of learning in my teaching of physics to leaving cert students I need to be careful not to make assumptions about facilities and skills that my students have outside my classroom.

I am in the process of putting all of this together for my assignment write-up.

My WebCT course has 'disappeared' and is now not available online. I have a back-up copy on a floppy along with the Flash movies that I have composed. As I have no access to my course I cannot create links from WebCT to my webpage. I'm not sure how you want them for assessment?

Anne Marie

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