

Disciplinary Approaches to Teaching and Learning Following the Introduction of a Managed Learning Environment

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Overview of the session

- Outline of the research and its context
- Discussion of some of the findings in relation to curriculum design
 - Knowledge structures
 - Approaches to teaching
 - Use of the MLE
 - Staff motivations

The Institutional context

- Post 92 University
- Circa 20000 full time and part time students
- An in-house MLE (StudyNet) piloted in 2001/2
 - Module databases (VLEs) created and populated automatically
- Full introduction in 2002/3 accompanied by usage targets

StudyNet use

- 2003/4
 - 80% of staff and students
 - 3.62 million logins
 - mean of 181 logins per user
 - 1600 student logins on 25/12/03
- 2004/5
 - 95% of staff and students
 - 4.85 million logins
 - mean of 243 logins per user
 - 51% logins from outside UH systems

Research

- Case study of the MLE implementation
- Particular interest in disciplinary differences due to differential uptake
- Key data from semi-structured interviews with StudyNet users:
 - Exploring practices and motivations
 - Undertaken in summer 2004

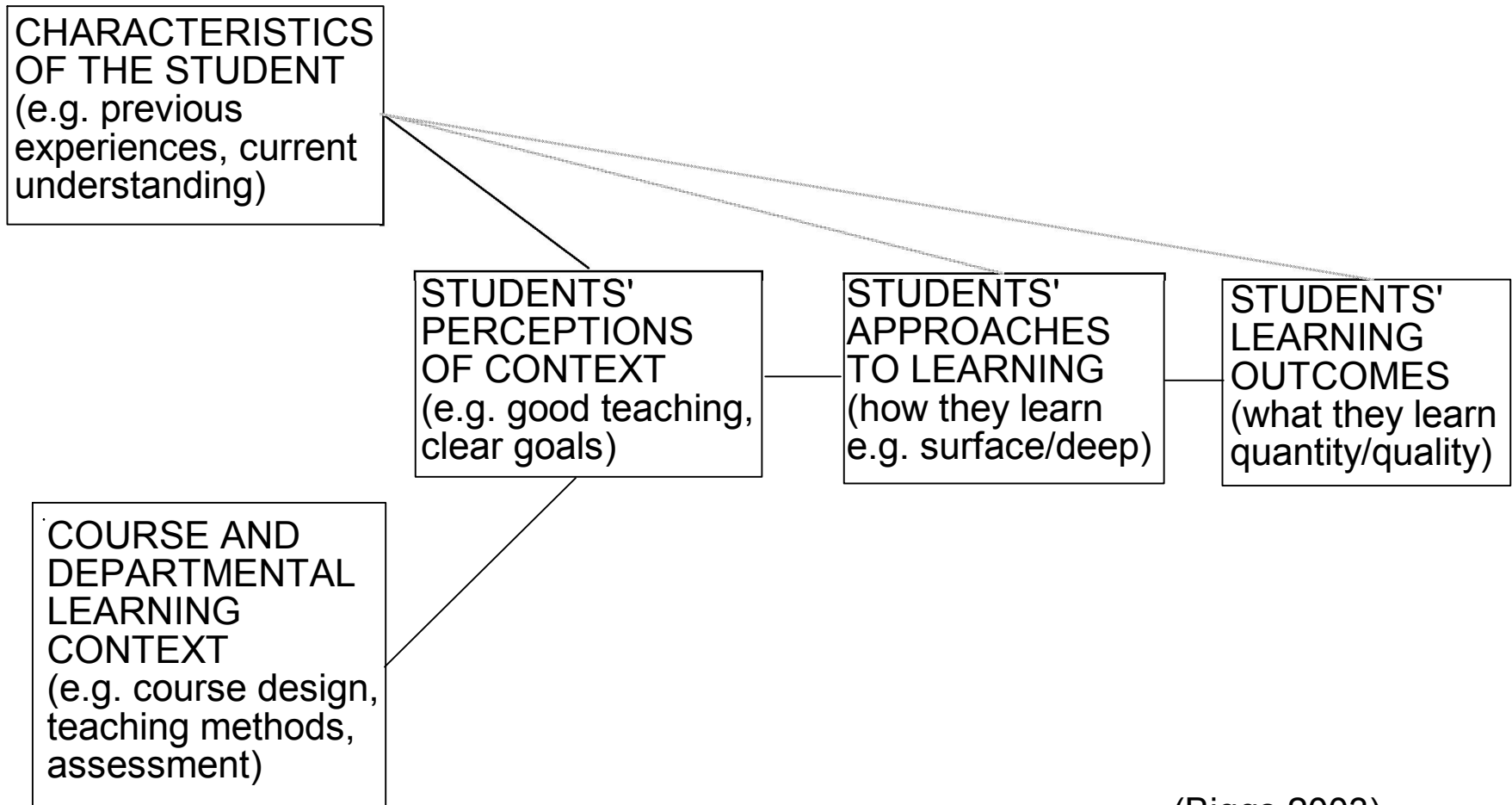
Interview sample

- 23 StudyNet users
 - Art and design (1)
 - Interdisciplinary Studies (1)
 - Engineering and Information Sciences (3)
 - Humanities, Law and Education (3)
 - Business School (6)
 - Health and Human Sciences (9)
- Self-selected

Theoretical influences

- Constructivism
- Biggs' 3 P model of student learning
- Laurillard's Conversational Framework
- Biglan, Donald and Becher's work on disciplines

Presage, Process, Product (3P) model of Student Learning



(Biggs 2003)

Knowledge structures

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Donald (1986)

- Basic concepts
- Logical structure
- Criteria to measure truth or validity
- Methods and procedures

Contestation

- Dilemmas for students in about how they go about constructing an understanding about what the constructed understanding might be
 - Objective vs subjective/interpretive?
 - Truth criteria?
 - Linear vs recursive development of disciplinary knowledge?

Most subjects include contested aspects

- *There is a mix. We teach pure science, physics, which is extremely objective, number based ... physics is physics, but we also teach the sociological side ... there are gender issues and other contentious issues. (radiography)*
- *... it is basic anatomy and physiology that is objective. It is the skills and the application of the skills and whether physiotherapy has an effect in the long term... and all that side of things is relatively subjective (physiotherapy)*
- *... I suppose the difference between humanities and perhaps some of the science subjects is that [open questions] start at day 1 whereas if you are doing natural science or maths or something you learn established stuff for most of your undergraduate time, it is only towards the end that the open questions come into view (philosophy)*

...and contestation increases as programme progresses

- *At undergraduate level we are teaching them what is on the [X-ray] image, how it looks like and it tends to be, forgive the pun, black and white. It is only at a postgraduate level we start actually picking that to bits and saying 'well a picture is a picture and it is open to interpretation and it is almost as much an art as it is a science...'
(radiography)*
- *In the first year Micro Economics you don't dramatically go into different schools of thought... in the second year they do different opinions but in the sense of that there are different ways of looking at the problems. (economics)*

Students struggle with uncertainty

- *Very often they don't believe you when you say 'This is an open question, I want to hear what you think about it' and you can see some of them think "of course you say that but there is a 'right answer' buried here somewhere and I shall set myself the task of digging it out" and very often they are quite uncomfortable with the thought that there isn't a correct answer that they can reproduce in an exam. (philosophy)*
- *People do struggle with [accepting that there is not a single correct answer] - and I do too sometimes - and often people, particularly when they are time pressured, want you to tell them what to do, and it is not that easy. (nursing)*

Real life muddies the waters

- *Because people are individuals and there is no one way of doing things, so a very simple thing like choosing a dressing for a wound... there are so many things that have to be taken into account so you can't say to them 'Right if you have got this situation, this is what you do', all you can do to them is say 'If you have got this situation you need to think about ABC and then make a rational decision from this range' (nursing)*
- *... but there is an opportunity for things to be a little more chaotic by having labs that don't work or give results that perhaps aren't as one would expect, so then you have got opportunity to enquire with the students, 'Hey, what do you think is happening here? Do you trust the instruments? Do you think we have got a situation here that is somehow different from what we have been talking about in the class? (engineering)*

Knowledge doesn't stand still

- *.. the anatomy is the anatomy - until we metamorphose into butterflies or whatever - that is going to stay roughly the same. Physiology is again.... but the physiotherapy side is, as with all physiotherapy, a slightly shifting sand in fact, evidence is coming out all the time. (physiotherapy)*
- *It changes weekly. Certainly in regard to the sciences concerned, I haven't given the same lecture twice since I have been here. The imaging is now so closely linked to computers and the computers as you know progress so quickly... (radiography)*

Approaches to teaching

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Lectures...

- *...[a lecture] is not the best environment for discussion but most of the students are just absorbing ideas and the discussions come out later on ... but it is nice to hold up examples to the whole group as an efficient way of communicating ideas to the students. (computer science)*
- *My objective with a lecture is to impart some core information and above that I then expect the students to be in a situation where they can reflect on that information and think about how it can be applied to different situations. (business)*

Lectures and interaction

- *My approach is to make [a lecture] as interactive as I can by my use of questioning, but when you have got vast numbers [ie 250] it is not always easy to manage that very well. (education)*
- *Most of us try to develop some sort of interaction although it is very difficult with 240 students in the class. (business)*
- *Our lectures, each slot generally runs over two hours and I have tried to do some of it text based, some of it talking, some of it actual practical stuff and find something practical to do. (nursing)*

Other formats

- Tutorials and seminars
- Workshops and practicals
- Typically involving small(er) groups

What's in a name?

- *....we have less students in a seminar or a tutorial than we have in a lecture. (business)*
- *I never know where seminars stop and tutorials begin.... there is more of a chance for the students to interact with each other and yourself and the material, so you are not juststanding at the front delivering whatever it is they need to know for an hour or whatever. (physiotherapy)*

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Filtering dialogic activities

- *The things we have tended to do in the tutorials are things that are perhaps less clear cut, ... and perhaps the students may need more help in interpretation of the information. (physiotherapy)*
- *I think <Human Computer Interaction> is probably the less certain, you can't give a right or wrong answer for something, so they prefer to work in a group or even ... I prefer them to work in groups so they can discuss things. (computer science)*

Feedback in F2F sessions

- *I will say to them ‘why did you do that?’ and they will say ‘I don’t know, we always do that’ and that is where you can then say ‘This is what you are trying to achieve, why does that happen?’ and a lot of the time you can see the penny dropping. (nursing)*
- *I think that is important that they are with you as you do that and I can explain if someone is looking puzzled, ‘Do you understand?’, ‘Where are you lost?’ etc. (business)*
- *... what is involved in face to face conversation, the role of body language, the eye contact, facial expressions, the way in which human beings are very skilled at playing off the things they say against the way they say them ... (philosophy)*

The value of authenticity

- *...so the whole physiotherapy department is doing scenario-based learning where we try and use real patient scenarios to base the next few weeks of the students' tutorials and practicals around to try and make it more realistic. (physiotherapy)*
- *...it was a video that they watched in class, because that is what you get in the real marketing world, you will get a lot of information in a very short period of time, you have to start thinking, take notes, then go away think about it, apply what you know and then put it in practice. (business)*

Motivation concerns..

- *The other problem is of course they don't read. At Liverpool I used to do traditional seminars where I would set them some reading in the previous week and we would discuss it in the seminar and I just had too many occasions here where nobody had done the reading and if you say 'you really ought to do the reading' you just get resentment and static.*
- *So it is very difficult to motivate them to really spend time thinking about it or do any reading for that matter.*
- *I think the difference in students is perhaps because of the finance problems, a lot of students work or whatever, but the students don't really come hungry to get an education, they come to get a certificate - it is 'what is the minimum they can do?' - we still get good students and it is easy in these type of discussions to lose the fact that some students are good...*

Use of the MLE

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Overview of MLE use

- Communicating
 - Teaching, Learning and Assessment
 - Tutors
 - Peers
 - Administration
- Accessing resources
 - Teaching, Learning and Assessment
 - Tutors'
 - Students'
 - Wider
 - Administration

Communication

- *It was us to them. Very one way information. It became a notice board, a schedule, somewhere to put notes for lectures. (computer science)*
- *The students often use the discussion forums to meet face to face to use meetings especially about the coursework so they will organise face to face meetings. They also often put up resources and say 'This is a really good website I found' and things like that. So that is quite useful, again peer learning thing. (physiotherapy)*
- *Near the assignment somebody might say [on the discussion forum] 'What are these theories that they want us to put in the assignment?' and then somebody would say 'I don't know as well' and then I would come in and say 'Think about the concepts that we talked about'. (business)*

Resources

- *Some sessions I put the slides up after the lectures purely because of the attendance requirement thing that we noticed that if you put up the slides they think that that is it, they don't have to come in and it stops them from thinking as well, if you give them material earlier on. (business)*
- *I do try to put supplementary material within there rather than just the hand-outs so then during lectures I can point students to StudyNet to say if you are looking in this folder there is x, y and z. (nursing)*
- *there are three presentations on each topic and the advantage of that is they get to see that people interpret things differently, 'Oh they interpreted it completely differently to how we did'. So they see other groups' presentations and then they start to think 'Oh yes there isn't a right answer'. (physiotherapy)*

Knowledge management skills

- *... students have always had to be able to discern whether a source of information is a good source of information or not. I think now there is so much more, they are having to use those skills more. (radiography)*
- *... before you had maybe a dozen journals and you could assess the quality of them for yourself so you could direct them. I think as people find more and more information it is difficult for us to keep up to assess the quality of that and we have to take a lot of things at face value. (nursing)*

Pedagogically neutral?

- *It is the connections across modules that ... and connections between information and similar information across modules that we just haven't got that facility and I think that that is really important for the students to make connections with different areas of knowledge and that wasn't possible on StudyNet, it was forcing you along particular routes. (education)*

Active engagement?

- *So the problem, the task of StudyNet is always to make sure that we develop StudyNet and technologies generally in ways that help us with this task of reducing passivity, going to a fire-lighting rather than bucket-filling picture of education and I am struggling to find ways of doing that with StudyNet. (philosophy)*

Staff motivations

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Intrinsic

- Internal drivers
 - Own enthusiasm (teaching and/or computers)
 - Predisposed to innovate
 - Prior experience
- Benefits for students
- Benefits for teachers

Extrinsic

- UH policy
- Student pressures
- Support from UH
- Support from colleagues

References

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- Donald JG (1986) 'Knowledge and the university curriculum.' Higher Education.. Vol 15, 267-282
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