From Teaching to Learning

A brief introduction to principles of learning and teaching in higher education

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Recent developments in teaching and learning

In his overview of developments in learning and teaching in higher education during the last thirty years, Ashwin (2006:3) notes the 'commitment to start with the learner, be they student or teacher, when thinking of ways of developing learning and teaching in higher education.' This approach was anticipated by the Association of Graduate Recruiters in 1994 who suggested that higher education needs to 'move from a model of teaching knowledge to one of enabling learning.'
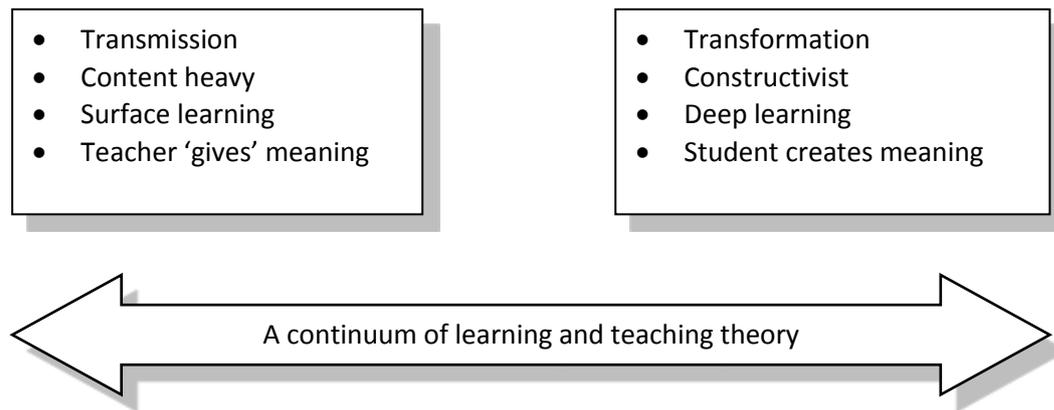
Ashwin (2006: 10-11) compares books on teaching and learning written in the early 1970's with those written more recently. In the former, the focus was on the teacher and what they did and the methods they used. Whilst the activities of teachers remain important, more recent scholarship of teaching and learning (Biggs, 1999; Ramsden, 2003; Biggs and Tang, 2007; Entwistle,) emphasises the students and their experience of learning. The key message is that in order to improve learning teachers must understand how students learn and come to understand.

The first way in which academics can help students to learn is to challenge our own conceptions of teaching and learning in higher education. Kember (1997) suggests two basic, contrasting conceptions:

- Teacher-centred/ content oriented
- Student- centred/ learning oriented

The first sees university teaching as a process of transmitting knowledge and ideas (content) from the lecturer to the student. It is teacher-dominated, content-heavy and generally requires students to be passive. The second conception is of much more active students who are involved in creating meaning as much as receiving it; in short, **it is about learning.**

The key elements of teaching and learning can be represented as a continuum (see below). It would be incorrect to label one end of the continuum as 'traditional' or the other as 'the latest', however, the most recent scholarship suggests we should be moving towards the 'transformation' side.

• Transmission
• Content heavy
• Surface learning
• Teacher 'gives' meaning

• Transformation
• Constructivist
• Deep learning
• Student creates meaning

A continuum of learning and teaching theory

From transmission to transformation

Given the rapid pace of change in society, industry and the economy, to what extent can we be sure that the knowledge we 'transmit' to our students will remain current for more than a year or two? If we are to do more than equip students with knowledge, we need to think about what the roles of the lecturer *and* the student are. Universities, either explicitly or implicitly, aim to develop students who will be lifelong, independent learners who can learn, unlearn and relearn in all aspects of their lives. This, clearly, has implications for lecturers and challenges us to develop learning and teaching which encourages students to learn, to solve problems, to experiment, to take risks and to be challenged.

> "Students are not empty vessels to be filled with facts, but active, enquiring human beings whose natural curiosity we must harvest. Most important, we need to redefine our jobs. We academics are not here to teach students, but to show them how to learn." (Schwarz, 2002)

It could be argued that 'showing' people how to learn is rather condescending, even authoritarian. As Ramsden (2010) points out,

> "The rationale for university teaching is not satisfying students, distributing information to them nor changing them, as some condescendingly say. Rather, it is enabling students to change for themselves."

From content-heavy to constructivism

Fox and Radloff (1999) refer to 'the obstacle of the overstuffed curriculum', particularly in the context of developing lifelong learners, which can be so heavy on content that students cannot cope with the quantity of information and are unable to discern frameworks which will help them to organise and understand their learning. As lecturers try to cover more subject-specific content they may make it even more difficult for students to understand, and the understanding they do have is likely to be more superficial, or 'surface' learning (see below).

> 'Faced with too much content, students may resort to surface learning, making little attempt to understand concepts and ideas. Indeed, overstuffing the curriculum may put students off learning altogether, thereby making it less likely that they will continue learning beyond the end of formal study and thus become lifelong learners.' (Fox and Radloff: 1999:131)

Part of the lecturer's job is to help students get the 'big picture' and to help them develop frameworks for learning and for understanding the fundamental concepts of their discipline, if necessary at the expense of covering excessive content.

A *constructivist* approach to learning is most helpful if we wish to help our students not only to learn but also to understand. Constructivism is student-centred insofar as it is based on the notion that students have to construct meaning for themselves, they cannot simply be given it.

> "Constructivism is based on the idea that learning is a result of mental construction whereby new information is connected to what we already know and our mental frameworks adapt and develop. Constructivist theory suggests that we must provide, and help learners to create, frameworks for learning.' (Scales, 2008)

From surface learning to deep learning

Students may come into university believing that learning is mainly a matter of accumulating information and reproducing it. Another possible view is that learning is about transformation and developing personal understanding. Marton and Saljo (1976) carried out

an interview study which led to his describing five different understandings of what learning consists of among adults. When students were asked to say what they understood by learning, their replies could be classified into five different categories:

1. Learning is a quantitative increase in knowledge. Learning is acquiring information or, knowing a lot.

2. Learning is memorising. Learning is storing information that can be reproduced

3. Learning is acquiring facts, skills and methods that can be retained and used as necessary

4. Learning as making sense or abstracting meaning. Learning involves relating parts of the subject matter to each other and to the real world

5. Learning is interpreting and understanding reality in a different way. Learning involves comprehending the world by reinterpreting knowledge

The last two statements characterise what may be referred to as 'deep learning.' Deep learning leads to understanding, to the ability to recognise connections and to apply underlying principles. This implies a capacity to transfer thinking and performance to other situations. Deep learning tends to be long lasting.

Entwistle (2005) suggests that *surface* learning is mainly concerned with *reproduction* and is characterised by students:
- Intention to cope with course requirements
- Drawing on lower level cognitive skills
- Treating the course as unrelated bits of knowledge
- Memorising facts and procedures routinely
- Studying without reflecting on purpose or strategy
- Finding difficulty in making sense of new ideas presented

In contrast:

Deep learning is *transformative* and is characterised by students:
- Intending to understand ideas for themselves
- Relating ideas to previous knowledge and experience
- Looking for patterns and underlying principles
- Checking evidence and relating it to conclusions

- Examining logic and argument cautiously and critically
- Becoming actively interested in the course content

Making meaning

Wells (1986: 218) concludes that the conception of teaching as transmission is mistaken and asks us to consider learning as the 'guided reinvention of knowledge'. He further states that: "… it is not possible simply by telling, to cause students to come to have the knowledge that is in the mind of the teacher. Knowledge cannot be transmitted. It has to be constructed afresh by each individual knower … "

Constructivist theory reminds us that we need to help learners to connect new learning to their previous learning and experiences and to make personal sense of it. It is the act of making sense and meaning that stays with a person rather than the specific content. As Costa (2001) suggests:

> 'We never really understand something until we can create a model or metaphor derived from our own unique personal world. The reality we perceive, feel, see and hear is influenced by the constructive process of the brain as well as by the cues that impinge upon it. It is not the content stored in memory but the activity of constructing it that gets stored… Humans don't *get* ideas; they *make* ideas.'

Learning spaces and teaching spaces

The traditional lecture goes back to medieval times, before the development of printed books. A monk would stand at a *lectern* in a *scriptorium* and read aloud from the precious book so that the assembled monks could copy his words verbatim. 'Lecture' comes from the Latin '*lectare*', 'to read aloud'. (Exley and Dennick, 2004)

> "The view of university teaching as transmitting information is so widely accepted that teaching and assessment the whole world over are based on it. Teaching rooms and media are specifically designed for one-way delivery. A teacher is the knowledgeable expert, the sage on the stage, who expounds the information the students are to absorb and to report back accurately." Biggs, J and Tang, C. (2007: 17)

One of the challenges for universities in the 21st century will be to design learning environments which can cater for more students and a greater diversity of students whilst encouraging student-centred learning. These 'learning spaces' will be based around new technologies and will be flexible enough to allow for the development of new and emerging technologies.

As has been suggested teaching rooms in universities have traditionally been focused on the lecturer as 'deliverer' and are one-way facing and presentational with students in rows or U-shaped arrangements. New technologies bring new opportunities for changing this dominant style. However, it is important to note that new technologies are not an end in themselves and do necessarily lead to effective learning. The JISC report 'Designing Spaces for Effective Learning' points out that the 'Use of technology in itself does not ensure effective teaching or learning, but it can extend the reach and flexibility of what the institution offers." (JISC 2006:11). In order to fully realise and develop the benefits of technology we need to have a shared understanding of learning and how students learn – this is one of the aims of this paper.

HEFCE supports the primacy of learning for understanding and enhancing learning and state that:

> "Our primary focus on the enhancement of learning and teaching drives our approach. Technology can support this enhancement goal, and is therefore a factor in development of effective learning, teaching and assessment strategies. Innovative developments in technology will only be relevant if the enhancement of learning and teaching is the core purpose." (HEFCE 2009: 8 Para. 33)

Whatever the extent of technology-enhanced learning, a shared understanding of the principles of learning and an awareness of the latest scholarship in learning and teaching are essential to the enhancement of learning and teaching and the effective use of learning spaces and teaching spaces. This has implications for staff development and involvement in the discussion and development of pedagogy as it applies to all learning, not just technology-enhanced learning. As JISC state 'Pedagogy first'. (JISC 2006: 10)

Learning underpins everything we do

Learning doesn't result only from teaching. It results from all areas of a student's activity in university and the activities of teaching and support staff. Sometimes it appears that the different strands of a student's experience are discrete and unconnected, for example, teaching and learning, employability, PDP, may be perceived by students and teachers as different spheres of activity provided by different members of staff and for different purposes. However, if we have a shared understanding of the principles of learning we can start to see how all the strands of activity knit together – they are all about learning.
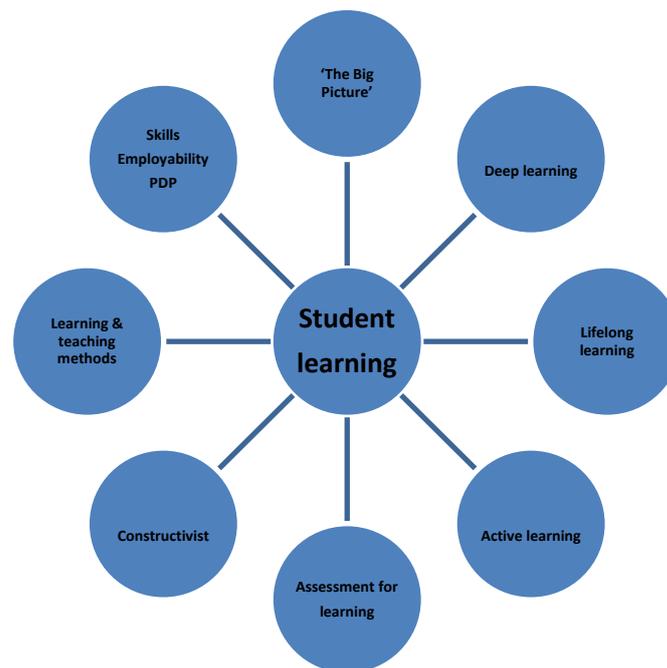
The next developments

As part of the development of learning as the core purpose of universities we need to refine and develop our lecturing, in the traditional sense but also to continue to develop range of teaching and learning methods which will encourage deeper and more active learning. Such a range of techniques might include:

- Case studies
- Problem-based learning
- Discussion and debate
- Concept mapping
- Independent research
- Presentations

- Role playsBrainstorming sessions
- Peer tutoring and teaching
- Networking
- Wikis and blogs
- Simulations and games
- Groupwork activities

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