

How to:

Wales
Deanery
Deoniaeth
Cymru



CARDIFF
UNIVERSITY
PRIFYSGOL
CAERDYDD

Get to Grips with Educational Theory

Lesley Pugsley

Historically in medical education, knowledge and skills have been 'acquired' over time through the apprenticeship process. Much of what was formally taught within the university setting was delivered via a transmission process, in a predominantly didactic lecture based format. The emphasis was on the accumulation of 'facts' with the biomedical model predominating and medical education seeing itself as a very distinct and specialist environment. Knowledge was presented as hard evidence despite the contradictions experienced in clinical practice where it is seldom the case that a situation or a condition can be considered in absolute terms. Attention was firmly focused on the teacher as expert, with little or no consideration given to the learner.

Overtime teaching methods have changed to acknowledge and incorporate the variety of different educational perspectives and strategies, both tacit and explicit which can be utilised in clinical contexts in order to facilitate learning. These ensure that practitioners are equipped with the knowledge, skills and attitudes that they need for certification and continuing professional development. There has been a shift of emphasis to ensure that clinical educators experience a variety of the different theoretical perspectives which can be utilised in the planning and design of instructional events. Educators are now regarded more as facilitators of learning, rather than imparters of knowledge. Educational principles are embedded within curriculum design and delivery in order to provide a formalised framework incorporating instructional methods and assessment strategies. There are immense benefits to be gained from using clinical educators, and in recent years this role has become increasingly professionalised, with increased numbers of clinical teachers gaining qualifications in medical education. It is imperative that medical education continues to draw on the wealth of experience that clinical educators bring to the field and it is important therefore that all clinicians have an appreciation of some of the main educational theories that can be utilised to inform learning and teaching and these perspectives are outlined below.

Behaviourism

This learning approach has its origins in the work of theorists such as Pavlov and Watson and focuses on observable and measurable behaviour. Behaviourist theory is concerned with the learners' response to stimuli; so the ability to make a differential diagnosis or perform a practical skill produces a consequence. This theory stresses the active role of the teacher who can direct the learning process, selecting a teaching method and controlling the 'stimuli' and reinforcing the appropriate responses. In a teaching setting behaviourist theory enables the teacher to use reinforcement to strengthen desired behaviours which can be in the form of tokens or rewards as reinforcers. This is a very controlling approach to education with the teacher determining what is learned and how and when the learning occurs. The limitations of this approach centre on the reductionism that it imposes on the objectives that are set and the structure of the knowledge delivered. Behaviourism dictates a didactic

approach to learning in which students are provided with a general statement followed by specific examples. So for example looking at the needs of a patient with diabetes, the teacher would state the needs and require students to assimilate this information.

Neo-Behaviourism

This approach, whose proponents are Tolman, Skinner and Gagne, developed from a perspective in which the mind was seen as being capable of selectivity rather than merely responsive to stimuli. In consequence, adopting this perspective enables the teacher to design a teaching event which takes some account of cognition, building from lower order perspectives to higher levels and includes planned feedback activity.

Humanism

The Humanist School developed as a reaction to the reductionism of Behaviourism, with psychologists such as Rogers and Maslow arguing that students need to be encouraged to make the most of their learning opportunities, with the teachers being encouraged to promote self esteem and motivation to encourage learners to learn. Students are central to the learning process and are taught through active self discovery rather than stimuli. Experiential learning is promoted and the student is allowed to set the pace and direction of their learning, with the teacher providing a positive learning environment with learning activities to guide, rather than direct the learning. Teaching is inductive, so taking a diabetic patient as the focus again, students would be encouraged to make observations about specific examples of patients they have seen with this illness and then as a group would attempt to generate a list of needs from these observations. This move from behaviourist to more humanist principles is an appropriate model for adult learning.

Andragogy

The term Andragogy refers to the ways in which adults learn and this is distinct from Pedagogy (the ways in which children learn). Malcolm Knowles identified key assumptions about adult learners which can be of help to medical educators.

1. Adults need to know the relevance of something before they begin to learn
2. Adults are capable of self direction
3. Adults have a wealth of experience to draw on
4. Adults have a readiness to learn what they need to perform effectively
5. Adults need to be orientated to learning that has real life application
6. Adults respond best to internal motivation

Constructivism

This is a broad umbrella term that encompasses many of the more recent learning theories learning. It is seen as a collaborative process with the learner playing an active role in the construction of knowledge. Reflection, experiential and self directed learning are key elements in this broad perspective. Teachers need to ensure that they have a good understanding of the entry level knowledge of the learners and a willingness to accept that learners will each construct individual meaning from what they learn. Learning is facilitated as the teacher aims to identify connections for the learners between the new knowledge and their pre-existing knowledge. Problem based learning can be used effectively here.

Cognitivism

Within this perspective the focus is on the students and their ability to engage with and actively organise knowledge. It acknowledges different learning styles and recognises that students will try to incorporate new information into their existing bank of knowledge and reflect upon the newly learned associations. Students are taught to think independently and analyse problems. The teacher facilitates learning; enabling learning through discovery as the new knowledge is assimilated and transformed; as it is checked against existing frameworks and applied to new situations. For cognitivist theorists such as Dewey, Bruner and Ausubel knowledge is a process rather than a product and learners are encouraged to be active participants in all teaching events.

Advance organisers can be used to prime the learners and activate prior knowledge, they provide introductory materials prior to the sessions which serve to aid recall, enabling links to be made between existing and new knowledge.

These different principles should be viewed on a continuum. They provide the educator with a number of different options and the choice of which approach is most appropriate and when, dependent in large part on the nature of the material to be learned and the level of the learners. The Table' below can be used as a guide to determine the most appropriate approach and shows how the theory underpinning the session dictates the type of learning and the most effective teaching methods.

Conclusions

It is helpful to know that there are learning theories and principles which can inform and underpin learning and teaching. Planning a learning event such that it takes account of the aims and objectives of the teaching session, the nature of the learners and the subject matter to be taught, can help to ensure a positive experience for both the learner and the teacher. As a trainer whilst it may not be necessary to have detailed knowledge of the range of educational principles which exist, it is nevertheless helpful to have an awareness of some of these different theoretical approaches. Learning can be planned or unplanned, it can occur in a variety of ways and in a range of settings, with just a little forethought, organisation and planning the learning experience can be facilitated and enhanced.

Guide to Selection of Learning Strategies

Type of Learning	Theory	Methods		
		Behaviourist	Cognitivist	Humanist
Knowledge	Transmit	Memory Association	Lecture Class presentation Case Study/Reading	Discussion Games
	Assess	Question/Answer	Test	Discussion
Psychomotor Skills	Initial	Demonstration	Demonstration	Discuss action
	Practice	Worksheets	Case Study	Project Simulation
	Application	On-the-job	Coaching/Feedback	Action Plan/Contract
Attitudes	Transmit and Assess	Assessment Reinforcement	Vicarious experience Debate	Self assessment Discussion of beliefs

Further Reading

Curzon, L. B. (2004). *Teaching in Further Education*. (6th edition) London: Cassell

Dornan, T. Mann, K. Scherpbier, A. Spencer, J. (2011). *Medical education Theory and Practice*. Elsevier: London.

Quinn, FM (2007). *The principles and practice of nurse education*. (5th edition). London: Chapman & Hall.

Reference

1. Reece, I. Walker, S. (2006) *Teaching, Training and Learning* (6th Edition) Sunderland. Business Education Publishers.

Series Editor

Dr Lesley Pugsley, Academic Section of Medical Education, School of Postgraduate Medical and Dental Education, Wales Deanery, Cardiff University.

Wales Deanery

Cardiff University, 9th Floor, Neuadd Meirionydd,
Heath Park, Cardiff CF14 4YS
Tel: +44 (0)29 2068 7451 Fax: +44 (0)29 2068 7455
E-mail: medicaleducation@cardiff.ac.uk

Wales
Deanery
Deoniaeth
Cymru

