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STRATEGIC ALERTNESS AND EXPANDED AWARENESS WITHIN SOPHISTICATED CONCEPTIONS OF TEACHING

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Abstract: Recent research into teaching in higher education has established what appears to be a nested hierarchy of conceptions of teaching moving from teacher-focused to student-focussed categories. This chapter draws parallels with the intellectual development of students to suggest a process of expanding awareness in academic staff of the relation between learning and teaching, which leads to the strategic alertness to 'teachable moments' as they occur in the classroom. A case study of one lecturer's changing conceptions of learning and teaching is presented in detail and related to the literature both of the nature of conceptions and schoolteachers' knowledge and beliefs about teaching. This analysis provides a fuller description of what may underlie sophisticated conceptions of teaching and leads to a discussion about how conceptual change may be encouraged in academic staff.

1. INTRODUCTION

This chapter examines recent research on how academic staff conceptualise teaching. In particular, it considers the ways in which an initially limited conception moves towards a more sophisticated appreciation of the complexities of learning and teaching in higher education. The starting point is a description of two studies which tracked developmental trends in student learning and epistemological beliefs. They indicate that higher level conceptions emerge out of the lower ones through reflection and integration, resulting in an expanded awareness of the nature of learning and academic study. These findings are used subsequently to draw parallels with changes in conceptions of teaching.

To understand how conceptions develop, their general nature is then examined before summarising recent research into contrasting conceptions of teaching at university. The chapter then extends the idea of a sophisticated conception of

similar phenomena, neither study considered the underlying ways of thinking which create such conceptions. A general discussion of the nature of conceptions follows, with ideas about the way conceptions of teaching develop being considered later.

3. THE NATURE OF CONCEPTIONS

Until quite recently, the literature of cognitive psychology described concepts as part of a formal category system existing in the mind - the cognitive structure - which was searched when trying to answer a question (see, for example, Anderson, 1990). Concepts, of course, have distinct features through which their meanings are defined. The cognitive research tradition emphasised an orderly, rational process through which people acquire concepts, by extracting the common features of experiences in which the concepts are exemplified. Experientially, however, such descriptions seem much too tidy. They may help to indicate how young children build up everyday concepts - like table or dog - but they are less successful in explaining how complex abstract concepts are constructed. The defining features of such concepts are not so easily distinguished within the experiences, so what is stored in the memory to allow us to grasp a common meaning?

When students are asked in class to explain what they understand by even a somewhat abstract term, like 'antidote', very few of them can give a precise definition, at least initially. They are more likely to start with an example, such as a snake bite and the serum used to counteract its effects. Gradually, they manage to build up a more general and complete definition, testing its adequacy step by step against the comments of other students and by personal reflection. It is very unlikely that this phenomenon can be explained though the existence of formally defined concepts - except as special instances. Explanations are typically constructed from a series of recollections and fragmentary bits of knowledge, pieced together on a particular occasion to satisfy the demands of the question, the questioner, and the specific context (Entwistle, 1998a).

The distinction between formally defined 'concepts' and 'conceptions', which carry personal meaning, is at the heart of the extensive work using 'phenomenography' carried out by Marton and his collaborators (Marton, 1994; Marton & Booth, 1997; Bowden & Marton, 1998). This research typically explores the range of conceptualisations which people report and simplifies them into a set of inter-related categories, often in the form of a hierarchy such as that described by Säljö (1979).

The existence of a range of contrasting conceptions has been found in a wide range of contexts and content areas, and the existence of these webs of personal meaning can now be supported by emerging neurological theories about the ways in which memories are stored and knowledge acquired, based on complex linkages between neurones (Edelman, 1992). Such 'neural nets', within computer-simulations, have proved capable of recognising the key aspects of incoming information, based on previous inputs and analyses, and of reacting to them appropriately.

teaching, drawing on teaching in schools to identify more general aspects of 'good teaching'.

The central section of the chapter presents a detailed case study - a reflection on the personal experience of conceptual change over many years of teaching experience. This extended illustration suggests close parallels with the development of students' epistemological beliefs, and also introduces the idea of *strategic alertness* as an additional aspect of good teaching.

The chapter concludes with a discussion of the ways in which changes in conception occur in everyday teaching, compared with those 'seeded' by concepts derived from research. It appears that these conceptions may have importantly different characteristics which would affect how they might best be utilised within educational development activities.

2. NESTED HIERARCHIES DESCRIBING DEVELOPMENT IN LEARNING

Rather few studies have followed up students to explore how learning and thinking change during the college years, and yet longitudinal studies represent the only effective way of investigating developmental trends. Two early studies did, however, provide important indications of the changes taking place in student thinking. Heath (1964) interviewed students repeatedly throughout their four years in college. He focused on differences in personality, but also considered contrasting ways of thinking, concluding that there were three distinctive personality 'types' - 'non-committers', 'hustlers' and 'plungers'. The non-committers were cautious and anxious, both in establishing personal relationships and in the ways they tackled their academic work. The hustlers were self-confident but also insensitively competitive. The plungers were impulsive in their actions and followed idiosyncratic pathways in their thinking which others found difficult to follow. Over time, the students gradually began to integrate the other characteristics into those of their own initial type and moved towards an 'ideal type' - the *reasonable adventurer*. Students who had reached this stage of development behaved thoughtfully towards others and alternated their thinking between the free ranging thought processes of the 'plunger' and the cautious approach of the 'non-committer', while maintaining the drive towards success of the 'hustler'. Although this was a small-scale study, its importance derives from the intensive, long-term contact which was maintained with the students, and the idea that apparently disparate characteristics may become integrated in the process of development.

The second study also reported interviews over a four-year period and again focused on both academic and personal development. Perry (1970) found evidence of a trend in intellectual and ethical development, through a series of nine 'positions' or stages, which has since been described as a change in *epistemological level* from dualist thinking to relativism. *Dualism* implies a belief in the existence of right or wrong answers to every question and in the early stages of their course students often treat faculty as the ultimate authority from whom they expect the 'right' answers, first to be learned and then to be reproduced in tests and examinations.

They soon realise that they are actually being presented with a *multiplicity* of views, all of which are given some weight by their teachers. Having realised that there is, in fact, almost always more than one way of looking at a given situation, many students conclude that any one opinion (and particularly their own) is as good as any other.

These developments cover the first four stages in Perry's scheme, leading on to a fifth position which is seen as pivotal. This position involves a 'changed conception of reality', with relativism being glimpsed but not fully understood. The dawning awareness that knowledge is generally provisional may provoke unease as its broader implications are perceived, and lead to regression towards the perceived safety of dualism. This unsettling tension between progress and regression is an 'unstable equilibrium', which leads to the position being described as 'pivotal'. The term means more than that, however. In Perry's own words,

(The fifth position) has taken us over a watershed, a critical traverse in our Pilgrim's Progress... In crossing the ridge of the divide,... (students) see before (them) a perspective in which the relation of learner to knowledge is radically transformed. In this new context, Authority, formerly a source and dispenser of all knowing, is suddenly authority, ideally a resource, a mentor, a model, and potentially a colleague in consensual estimation of interpretations of reality... (Students) are no longer receptacles but the primary agents responsible for their own learning... As students speak from this new perspective they speak more reflectively. And yet the underlying theme continues: the learner's evolution of what it means to know (Perry, 1988, p.156).

Only gradually do students fully embrace *relativism*, accepting that conclusions necessarily rest on subjective interpretations of objective evidence, with different conclusions justifiably being drawn from the same body of evidence. Only a minority of students in Perry's study were able to take the final step and demonstrate *personal commitment* to their own interpretation or perspective. This final stage may be seen in the attempts which some students made to construct their own coherent, individual perspectives of the discipline, and to identify with that view while retaining tolerance of alternative viewpoints.

In the longitudinal studies, several students who had reached the final stage reported what can be seen as an *expanding awareness* of the nature of knowledge and of inter-personal relationships. The recognition of alternative interpretations of evidence and of competing ideologies led these students to be cautious in their use of evidence and to become more tolerant of other viewpoints. They were also able to reflect on their own intellectual progress, recognising how they had gradually come to realise both the importance, and the limitations, of evidence. Not surprisingly, very few students reached this level of awareness of their own reasoning processes, but their comments did provide a powerful indication of the developmental trends involved.

Perry showed that students developed through his hierarchy of positions at different rates and to different extents during their time in higher education, influenced in part by their educational experiences. These conclusions have been

largely supported in subsequent studies (see the review by Hofer & Pintrich, 1997), leading to a recognition that higher epistemological levels emerge out of lower ones as a 'nested' hierarchy. These findings, taken in conjunction with Heath's, suggest that intellectual development in higher education involves the gradual integration of previously separate personal characteristics and ways of thinking, leading to an expanding awareness of the complexities of academic knowledge.

A subsequent developmental hierarchy was described by Säljö (1979) from interviews with a sample of adults with varying educational experience. His five distinct conceptions of learning ranged from learning as rote memorisation and the *reproduction* of knowledge conveyed by the teacher, to a recognition that learning rested ultimately on the personal *transformation* of the information presented, drawing on what was known or had been experienced already. In this way conceptual understanding could be achieved. Individuals who recognised the importance of understanding for themselves were still ready to use rote learning when necessary, but were conscious of the variety of forms of learning available, and how they could be used. In a subsequent study, the broadest conception was extended to represent learning as 'developing as a person' (Marton, Dall'Alba & Beaty, 1993; Marton & Säljö, 1997). Overall, these six categories again seem to form a nested hierarchy.

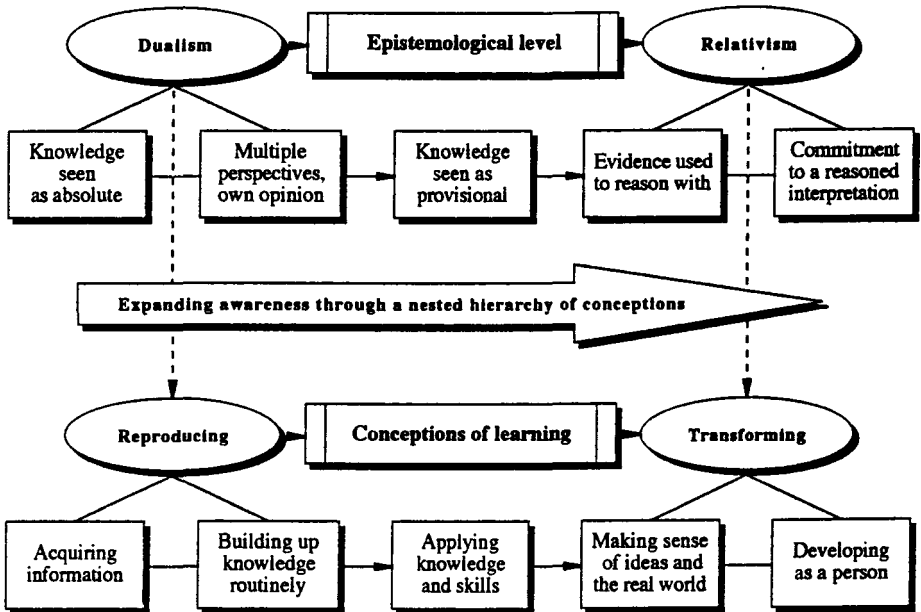


Figure 1. Intellectual development and conceptions of learning

Clear parallels can be seen between the hierarchies identified by Perry and by Säljö, with dualism being associated with a reproductive conception of learning (as illustrated in the published extracts from Perry's interviews) and the descriptive similarity continuing through the two series of categories, as suggested in Figure 1. Although Perry's epistemologies and Säljö's conceptions seem to describe very

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