

# Critical aspects of student teachers' conceptions of learning

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## Abstract

The aim of this phenomenographic study was to discover the educationally critical aspects of learning conceptions among health education student teachers ( $N = 20$ ). The qualitative data consisted of written essays and semi-structured interviews. Six qualitatively distinctive conceptions of learning could be discerned, namely learning as 1) the reproduction of acquired health knowledge, 2) the application of health knowledge, 3) developing personal meanings on health matters, 4) the transformation of individual thinking, 5) personal growth, and 6) collective meaning-making. These qualitatively distinct categories were reflected through three themes, which embodied critical aspects: the nature of the knowledge involved, the nature of the reflection involved, and the role of the social environment. In bringing new insights into the existing literature, this study confirms a need for research on learning conceptions across different cultural and educational contexts.

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## 1. Introduction

Teachers' conceptions of teaching and learning have been regarded as associated with the teachers' teaching approaches, with consequent influence on the pupils' learning approaches and learning outcomes (Kember & Kwan, 2000; Trigwell & Prosser, 1996; Trigwell, Prosser, & Waterhouse, 1999), though the causal relationships have been difficult to demonstrate (Eley, 2006; Kane, Sandretto, & Heath, 2002; Laksov, Nikkola, & Lonka, 2008). Such conceptions have been the subject of an extensive body of research, focusing most frequently on academic learning (Dahlin & Regmi, 1997; Duarte, 2007; Marton, Dall'Alba, & Beaty, 1993; Marton, Watkins, & Tang, 1997; Samuelowicz & Bain, 2001; Tynjälä, 1997; see also Entwistle & Peterson, 2004) or on learning in school subjects such as physics (Huibregtse, Korthagen, & Wubbels, 1994) and science/biology (Mellado, Bermejo, Blanco, & Ruiz, 2007; Tsai & Kuo, 2008).

Often the research on learning conceptions has been conducted within a phenomenographic research tradition, with one of the most cited studies being that of Marton et al. (1993), which was conducted among Open University students in Britain. Marton et al. identified six qualitatively different and hierarchically ordered conceptions about learning, namely learning as 1) increasing one's knowledge, 2) memorizing and reproducing, 3) applying, 4) understanding, 5) seeing something in a different way, and 6) changing as a person. The first five conceptions are parallel with those arrived at by Säljö (1979, see also van Rossum, Deijkers, & Hamer, 1985) almost fifteen years earlier, but the sixth conception was added when Marton et al. (1993) found a group of students who understood learning as a change in themselves – though it should be noted that, as van Rossum and Hamer (2010, p. 7) indicate, a similar conception had been formulated earlier by van Rossum, Deijkers, and Hamer (1984). In the interpretation of the findings it was suggested that the role of *meaning* in learning could constitute the main difference between the conceptions. While the constitution of meaning is absent in the first three conceptions, in the last three conceptions it is of central importance. To put it in another way, the first three

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categories are *quantitative*, focusing on acquiring an increasing quantity of information, while the last three are *qualitative*, focusing on understanding and integrating knowledge (Boulton-Lewis, Brownlee, Berthelsen, & Dunbar, 2008). Entwistle (2007) has pointed out that the six categories form a hierarchical structure in which the higher categories have similarities with the higher epistemic beliefs found in classical studies by Perry (1970).

It should be borne in mind that in the phenomenographic research tradition, the structure of research findings is often described in terms of an inclusive or nested hierarchy (Marton, 1994; Marton & Booth, 1997). Hence, in the study by Marton et al. (1993) the later conceptions of learning build upon the previous ones, covering aspects observable in the previous ones but not vice-versa (see Prosser & Trigwell, 1999, p. 38). According to Cope and Prosser (2005), the categories that are higher in a hierarchy represent increasing focal awareness: they include more aspects related to understanding the target phenomenon, and/or more (or better described) links between the aspects, and/or a deeper conceptualization of one singular aspect. In that sense, the conceptions lower in a hierarchy represent less advanced, less complex or less sophisticated ways of seeing learning, whereas the conceptions that are higher in a hierarchy represent more advanced, more complex, more complete and more sophisticated ways of seeing learning (see Marton & Booth, 1997, p. 107). Thus, the conceptions do *not form a continuum* (cf. Kember, 1997), being rather a nested, hierarchical organization encompassing the breadth in awareness of the target phenomenon (Åkerlind, 2003).

A number of studies (e.g. Boulton-Lewis, 2004; Marshall, Summers, & Woolnough, 1999) have produced findings fairly similar to those of Marton et al. (1993) described above. This has led to certain assumptions on the nature of learning conceptions. It is argued that the conceptions of learning may be more or less universal; thus the conceptions found in different contexts (i.e. cultural or educational) either overlap or complement each other, with the addition only of cultural “color” (Dahlin & Regmi, 1997; Marton et al., 1997). However, there are also arguments supporting a greater role for context in defining the conceptions (Eklund-Myrskog, 1998; Gao & Watkins, 2002; Tynjälä, 1997), and a fairly widespread view that the conceptions are contextually-bound to some extent. In either case, there is a need for research comparing different educational and cultural contexts to show the ways in which the context either “colors” or defines the learning conceptions in question (Gao & Watkins, 2002).

In the present study we approach the question of learning conceptions from the point of view of student teachers, and more specifically, *how they understand their pupils’ learning* (i.e. not their own learning). The context here is the training of Finnish health education<sup>1</sup> teachers, which takes place at university level. The aim of the teacher training is to create the kind of learning conditions that will support the development of

student teachers’ understanding in a more powerful direction, since “powerful ways of acting spring from powerful ways of seeing,” as Marton, Runesson, and Tsui (2004, p. 8) argue. To create such conditions requires consideration of the student teachers’ prevailing conceptions and the aspects that are *educationally critical* in gaining a more complex, complete, or powerful way of seeing the learning in question (Marton & Booth, 1997, p. 111; Runesson, 2006) – in this case, the learning that occurs in health education.

Within the research literature one can observe differences in how the critical aspects have been understood and applied. One way of understanding the critical aspects is to see them as representing the critical features of certain types of disciplinary knowledge. As an example, Marton and Pang (2008) argue that in economics in promoting learning of the notion of price such features include “demand” and “supply,” with economics as a discipline defining those features as critical for students to know (to discern and to focus on). These kinds of critical features are part of the teacher’s (subject matter) content knowledge (see Marton & Pang, 2008) – in other words the teacher’s subject-specific knowledge about 1) what he or she regards as important for students to know, and for what reasons, and 2) how this domain-specific understanding is related to other issues both within and outside the discipline (Shulman, 1986). However, in the present case we see educationally critical aspects as representing *the critical differences between various ways of understanding the same phenomenon* (see Åkerlind, 2004, 2005a), since we are interested in what a teacher educator has to take into account when aiming to develop student teachers’ understanding of (pupils’) learning in the direction of increasing complexity (see Marton & Pang, 2008). These critical differences contribute to the teacher’s pedagogical content knowledge (Marton & Pang, 2008), which involves both subject-specific knowledge and an understanding of ways of teaching the particular content matter (Shulman, 1986, 1987).

With this as background, *the purpose of the present study* was to explore health education student teachers’ ways of understanding the learning that takes place in health education within the school classroom. In addition, the aim was to discern the aspects that are educationally critical for expanding an understanding of such learning in a more complex and complete direction. The following specific research questions were set:

1. How do student teachers understand learning in (school subject) health education?
2. What are the educationally critical aspects that differentiate between qualitatively varying ways of experiencing learning in health education?

Our hypothesis was that health education student teachers’ learning conceptions would display similarities to the conceptions identified in earlier studies, but that the context of health education might give rise to unique aspects. Due to the paucity of previous research on educationally critical aspects in the context of health education, it was not possible to form hypotheses about what these might be.

<sup>1</sup> In this paper *health education* is used to describe a specific school subject in the Finnish school system.

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