ELSEVIER

Learning and Instruction 16 (2006) 279–294

Learning and Instruction

www.elsevier.com/locate/learninstruc

On the dynamics of students' approaches to learning: The effects of the teaching/learning environment

Katrien Struyven*, Filip Dochy, Steven Janssens, Sarah Gielen

Centre for Research on Teaching and Training, KULeuven, Dekenstraat 2, 3000 Leuven, Belgium

Abstract

This study investigates the effects of the learning/teaching environment on students' approaches to learning (i.e. combination of intention and learning strategies) and compares a lecture based to a student-activating setting within the first year of elementary teacher education. Data collection ($N = 790$) was carried out using a pre-test/post-test method by means of the Approaches to Learning and Studying Inventory (ALSI). Though students' approaches were similar at the start of the course, a clear distinction was found after experiencing the lecture based and student-activating teaching/learning environments. However, the direction of change was opposite to the premise that student-activating instruction deepens student learning. Instead, the latter pushed students towards a Surface Approach to learning and students' Strategic Approaches suffered significant lowering.

Keywords: Approaches to learning; Student teachers; Higher education; Lectures; Teaching methods; Active learning; Student-activating teaching

1. Introduction

Since the development of constructivist theories of learning (Kinnucan-Welsch & Jenlink, 1998; Oxford, 1997; Terwel, 1999; Vermunt, 1998; Von Glasersfeld, 1988), a whole range of new teaching methods entered the educational scene. While lectures have faded into the background, the foreground is being occupied by constructivist, active teaching methods such as problem based assignments, learning contracts, case related tasks and collaborative paper assignments. These teaching methods challenge students to construct knowledge by means of authentic assignments that require active involvement of students to incorporate the available information. Students select, interpret and apply knowledge using practical cases and solve complex vocational problems (Jacobson & Mark, 1995; Meyers & Jones, 1993; Silberman, 1996; Tenenbaum, Naidu, Jegede, & Austin, 2001; White, 1996). In short, student-activating teaching methods are central to the purpose of the present study.

While student-activating teaching methods serve this purpose, the constructivist movement claims that lectures often fail to ensure that students learn in a deep manner that is active, transitive and constructive in nature (Bonwell & Sutherland, 1996; De Corte, 2000; Hatch & Farris, 1989; Holt-Reynolds, 2000; Kroll & Laboskey, 1996; Tynjälä, 1997). Student-activating teaching methods are intended to challenge students to acts of knowledge construction rather than knowledge acquisition and, consequently, deepen student learning beyond the levels of reproduction

* Corresponding author. Tel.: +32 16 32 60 25; fax: +32 16 32 57 36.
E-mail address: Katrien.struyven@ped.kuleuven.be (K. Struyven).

0959-4752/$ - see front matter © 2006 Elsevier Ltd. All rights reserved.
doi:10.1016/j.learninstruc.2006.07.001

and rote learning. This assumption underlies the research question central to the present study, namely "*what are the effects of student-activating teaching methods versus lectures on students' approaches to learning?*".

In addition, constructivist theories and practices go together with a shift from a 'test' culture to an 'assessment' culture (Birenbaum, 1996). The assessment culture, embodied in current uses of alternative assessment favours: the integration of assessment, teaching and learning; the involvement of students as active and informed participants; assessment tasks which are authentic, meaningful and engaging; assessments which mirror realistic contexts; focus on both the process and products of learning; and moves away from single test-scores towards a descriptive assessment based on a range of abilities and outcomes (Sambell, McDowell, & Brown, 1997). The new assessment practices, such as peer assessment, portfolio assessment and case based evaluation, associate with student-activating teaching and as a consequence, the assessment method that follows instruction is included in the study.

Educational literature mainly discusses three approaches to learning: the surface, deep and strategic approaches (Entwistle, McCune, & Walker, 2001; Entwistle, Meyer, & Tait, 1991; Entwistle & Ramsden, 1983). Firstly, students who adopt a Surface Approach to learning, attempt to rote learn material in order to subsequently reproduce it (Trigwell & Prosser, 1991). Students describe an intention to complete the task with little personal engagement, seeing the work as an unwelcome external imposition. Routine, unreflective memorization and procedural problem solving are associated strategies, with restricted conceptual understanding being an inevitable outcome (Entwistle et al., 2001). The Surface Approach is related to lower quality outcomes (Trigwell & Prosser, 1991). In contrast, students adopting a Deep Approach seek meaning in order to understand (Trigwell & Prosser, 1991). This approach is associated with an intention to comprehend, to active conceptual analysis and, if carried out thoroughly, generally result in a deep level of understanding (Entwistle et al., 2001). High quality outcomes are related to this approach (Trigwell & Prosser, 1991). However, the Deep Approach is not necessarily always the 'best' way, but is the only way to understand learning materials fully. Finally, several students refer in their perceptions of learning to the assessment procedures used. Students adopting a Strategic Approach to learning have the intention to achieve the highest possible grades by using organised study methods and effective time management (Entwistle et al., 2001; Entwistle & Ramsden, 1983). The strategic (or achieving) approach describes well-organised and conscientious study methods linked to achievement motivation or the determination to do well. The student relates studying to the assessment requirements in a manipulative, even cynical, manner. For example: "*I play the examination game. The examiners play it too. … The technique involves knowing what is going to be in the exam and how it's going to be marked. You can acquire these techniques from sitting in the lecturer's class, getting ideas from his point of view, the form of the notes, and the books he has written – and this is separate to picking up the actual work content*" (Entwistle & Entwistle, 1991, p. 208). Dependent on the assessment method used, students tend to substitute 'surface' memorising or 'deep' understanding.

In contrast to learning styles, approaches to learning are not characteristics of learners, they are determined by a 'relation' between a learner and a context. A learner can adopt a Deep Approach in one context and a Surface Approach in another, depending on the characteristics of the context and the learner's interpretation thereof. Approaches to learning are therefore not synonymous with learning styles, which are defined as characteristics of individual learners that remain fairly stable across multiple contexts (Marshall & Case, 2005). Approaches to learning are a phenomenon more influenced by the demands of particular learning environments than by predispositions of personality (Rhem, 1995).

Approaches to learning are thus defined by both features of the learning/teaching environment, 'the context', and student characteristics and experiences, 'the learner'. Defining features of students' approaches to learning concerning the learner are the student's intentions (Entwistle & Entwistle, 1991), conceptions of learning (Van Rossum & Schenk, 1984; Marton & Säljö, 1997), study habits (Entwistle & Tait, 1995), motivation (Fransson, 1977) and student failure (Entwistle et al., 1991). The context, in particular the teaching/learning environment, also entails defining features of students' approaches to learning such as the assessment type (Entwistle & Entwistle, 1991), nature of the questions (Säljö, 1975; Marton & Säljö, 1997) and assessment expectations (Kirschner, Meester, Middelbeek, & Hermans, 1993), the quality of the learning environment (Entwistle & Ramsden, 1983; Sivan, Wong Leung, Woon, & Kember, 2000; Trigwell & Prosser, 1991) and discipline- and institution-specific influences (Eklund-Myrskog, 1998; Cashin & Downey, 1995).

The defining features that are related to 'the context', and particularly the quality of the learning environment, are of primary concern to the present study. The academic environment per se is not the defining feature: the crucial factors are the students' perceptions of how the academic environment relates to their approaches to learning (Entwistle, 1991). Entwistle and Ramsden (1983) found that at a whole class or department level, a perceived heavy workload and