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The relationship between student learning process, study success and the nature of assessment: A qualitative study

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ABSTRACT

Assessment has an important role in affecting students' learning, but qualitative studies regarding this relationship are rather scarce. In addition, course grades do not necessarily reflect the quality of learning outcomes. The aim is to qualitatively examine why high and low achieving students in the same course study differently according to the assessment method and how they explain their behaviour. Altogether 24 students were interviewed in this study. Analyses were conducted with inductive content analysis. The results indicate that course grades do not necessarily reflect qualitative learning outcomes due to the nature of the assessment. In addition, the present study suggests that self-regulation and motivation are important factors in studying and might prevent the negative effect of inappropriate assessment.

Introduction

Assessment is an important factor influencing students' study processes (Segers & Dochy, 2006). The "backwash effect" (Biggs, 1996) refers to the pivotal role assessment plays in determining how students study. In particular, studies have shown that students' experiences of assessment methods influence how they engage in learning (Struyven, Dochy, & Janssens, 2005). Although the relationship between the assessment and students study processes is, qualitative studies concerning it are rather scarce. In their early study, Marton and Säljö (1976b) found that some students change their learning process according to their perceptions of what is required of them. Recent studies of the relationship between students' perceptions of the teaching-learning environment and their approaches to learning have focused mainly on quantitative methods (Diseth, 2007b; Parpala, Lindblom-Ylänne, Komulainen, Litmanen, & Hirsto, 2010; Rytkönen, Parpala, Lindblom-Ylänne, Virtanen, & Postareff, 2012). A qualitative perspective for exploring the relationship between assessment and study processes is important in order to understand this relationship better: the use of student interviews may deepen the understanding why students in the same course study differently according to the assessment method and how they explain their behaviour.

Students' academic achievement is usually measured with grade point averages. Measuring students' learning outcomes only with grades, however, is problematic because grades do not always qualitatively measure the learning outcome. For example, the deep approach to learning has been found to be positively related to quality of exam responses but no relation between deep approach and course grades were found (Minbashian, Huon, & Bird, 2004). In addition, assessment in a bioscience course does not necessarily measure the learning outcomes it is intended to measure (Räisänen, Tuononen, & Postareff, 2012). Consequently, quantitative perspective in studying students learning outcomes is not enough: grades alone are not necessarily equivalent to students' qualitative learning outcomes. Thus, learning outcomes should be explored in a variety of ways where different perspectives affecting students' learning are taken into account. There are not many studies which combine students' self-reported learning outcomes and their actual course grades. Räisänen et al. (2012) have found that bioscience students' experienced learning outcomes do not necessarily mirror their course grades.

Approaches to learning

Marton and Säljö (1976a) differentiated two qualitatively different ways of processing information: surface processing meant concentrating on the text itself and memorising it, whereas deep processing meant trying to understand the main message of the text. Since then, these two qualitatively different approaches to learning – deep and surface – have been widely explored (Biggs, 1987; Entwistle & Ramsden, 1983; Marton, Hounsell, & Entwistle, 1984; Parpala et al., 2010; Prosser & Trigwell, 1999). After the

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studies by Marton and Säljö (1976a, 1976b), it became evident that the deep and surface approach did not describe students' aims and study processes well enough. A third, *strategic approach* was also identified which emphasised achieving motivation in studying: students intention was to achieve as well as possible by studying according to the assessment (Entwistle & Ramsden, 1983; Entwistle & McCune, 2004). Recently, the intention to achieve has been shown to result from sense of responsibility in studying (Entwistle & Peterson, 2004). Thus, current research on approaches to learning mainly refers to o*rganised studying and effort management*, which emphasises good time management, self-regulation and the effort invested in studying (Entwistle, 2009; Entwistle & McCune, 2004). Organised studying can be considered more of an approach to studying than approach to learning because it describes how students manage their time and put effort in their studying instead of their learning processes (Entwistle, 2009). Furthermore, students can apply different combinations of approaches to learning (Meyer, 1991). Memorising, for example can be combined with understanding (Meyer, 2000), and the deep approach can be combined with organised or unorganised studying (Parpala et al., 2010).

Motivation, self-regulation and study success

Students' approaches to learning have proved to be related to student motivation (Biggs, 1987; Entwistle, 1998; Entwistle & Ramsden, 1983; Kyndt, Dochy, Struyven, & Cascallar, 2011). Students' motivation in learning usually is divided to extrinsic and intrinsic motivation: extrinsically motivated students are influenced by external rewards and focus on completion of courses, whereas intrinsically motivated students are interested in the subject area and the motivation reflect personal goals and leads to deep approach to learning (Entwistle, 1998). Furthermore, the importance of students' self-regulation has been emphasised strongly in resent research on learning. Self-regulation in learning can be determined as the ability to actively set goals in learning, take responsibility in learning and put effort in attaining the goals (Schunk & Zimmermann, 2003). Self-regulated learners are also aware of themselves as learners (Zimmerman, 1990). Self-regulation has shown to be related to deep approach to learning and better study success (Heikkilä & Lonka, 2006). Organised studying and self-regulation are partly similar concepts which come from different research traditions. Self-regulation can be regarded as the meta-cognition in learning as well as setting goals and taking responsibility in learning as to organised studying emphasises the processes that students apply in attaining these goals.

Several studies have found a relationship between approaches to learning and academic achievement (Entwistle & Ramsden, 1983; Lizzio, Wilson, & Simons, 2002; Richardson, 2006). Earlier studies have found a positive relation between study success and deep approach to learning (Román, Cuestas, & Fenollar, 2008) and a negative relation between surface approach to learning and study success (Diseth, 2003; Diseth & Martinsen, 2003). A relationship between strategic approach and study success has also been found (Diseth, 2007a, 2007b). Previous studies have also suggested that the deep approach to learning combined with organised studying leads to high-quality learning outcomes (Entwistle & Ramsden, 1983; Lindblom-Ylänne, 1999; Marton & Säljö, 1984). However, also contradictory results about the relation between study success and approaches to learning have been found. For example, Lizzio et al. (2002) found a positive relation between surface approach to learning and study success. In the context of biosciences, organised studying was found to be related to study success, but no relation between deep approach and study success was found (Rytkönen et al., 2012).

Aims of the study

The present study explores two groups of university students' studying in two different bioscience courses with different exams. The focus in the present study is on students study profiles, in other words, on combinations of students' approaches to learning, study motivation and their self-reported learning outcomes. Thus, the purpose of the present study is to explore high- and low-achieving students' study profiles in two bioscience courses with different exams. The high and low achieving students were labelled according to their actual course grade. Previous studies have shown that bioscience students experienced learning outcomes and their course grades are not necessarily comparable (Räisänen et al., 2012). Therefore, the present study focuses not only to the course grade (high and low) but also on students' own self-evaluations of their learning outcomes, their study processes and exams. In the Faculty of Biosciences, no relationship has been found between the deep approach to learning and study success (Rytkönen et al., 2012). These results can occur as a consequence of assessment methods which do not support students' deep approach to learning. In addition, we expect to find some differences in the students' study profiles in these two courses because of the different nature of the exams:

Research questions

1. What kind of combinations of approaches to learning, motivation and self-reported learning outcomes high and low achieving students in two different bioscience courses with different exams apply?
2. How are these students' study profiles related to their achievement in these courses?

Method

Participants

A total of 24 students participating in the courses volunteered to be interviewed comprising 11 students studying in Course 1 and 13 students studying in Course. These students in both courses varied in many ways: In course 1, eight of the students had their major subject in the Faculty of Biological and Environmental Sciences, two majored in chemistry and one majored in biotechnology. The students in Course 2 comprised nine students majoring in the Faculty of Biological and environmental sciences, one biochemistry student, one chemistry student, one mathematics student and one student studying educational sciences. The participants in Course 1 comprised one first-year student, three second year students, three third-year students, and three students who had studied at the university more than four years. Of the students participating in Course 2, there were four first-year students, five second year students, two third-year students and three students who had studied at the university more than four years. In Course 1 there were two male and nine female participants and the age ranged between 19 and 26 years old. In course 2, there were four male and nine female students participating in the present study and the age of the participants ranged from 19 to 34 years old.

Context and materials

This study was conducted in two different bioscience courses. The courses were selected for analysis on the basis of their similarity; both courses were compulsory bachelor's-level courses and both had similar learning environments. About 80 students participated in both courses and the lectures were held in a large lecture hall where the teacher presented the subject matter to the