Teaching and Teacher Education 40 (2014) 1–9

Contents lists available at ScienceDirect

Teaching and Teacher Education

journal homepage: www.elsevier.com/locate/tate

Teacher practice in secondary vocational education: Between teacher-regulated activities of student learning and student self-regulation

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HIGHLIGHTS

- Teachers in secondary vocational education execute a combination of regulation modes.
- Teachers differ in the degree to which they execute this combination.
- Student perceptions and observer ratings are congruent.

ARTICLE INFO

Article history:
Received 8 January 2013
Received in revised form
28 November 2013
Accepted 15 January 2014

Keywords:
Teacher practices
Secondary (vocational) education
Student perceptions
Observational study

ABSTRACT

The interplay between teacher regulation and student self-regulation of learning is an important topic in contemporary theories of teaching and learning. This study used mixed methods, including a student perception inventory and observations, to investigate whether teachers differ in their regulation mode during lessons. The results of the student perception study showed that teachers combined external, shared and internal regulating activities. Three groups of teachers differed in the extent to which they combined regulating activities. The classroom observations confirmed the presence of these three groups. The results are discussed with respect to their implications for educational practice and theory.

1. Introduction

More than at any time in the past, life and work today require far more than simple thinking skills and content knowledge. The ability to navigate complex life and work environments in the globally competitive information age requires individuals to attend rigorously to the development of essential skills, such as initiative, critical thinking, and self-regulation (Partnership for 21st Century Skills, 2009). Education plays an important role in helping students develop these skills, for example, by making them jointly responsible with the teacher for their learning and actively involving them in learning activities. When students are actively involved in learning activities, it is more likely that learning will be meaningful (Aldridge, Fraser, Bell, & Dorman, 2012). Self-regulation is important not only as a life skill but also during the school career. Students who can regulate and adjust their learning behaviour learn more efficiently (Cazan, 2013) and achieve better academic results (Järvelä, Järvenoja, & Malmberg, 2012; Jossberger, Brand-Gruwel, Boshuizen, & Van de Wiel, 2010; Kuo, 2010; Pintrich, Roeser, & De Groot, 1994; Stewart, Cooper, & Moulding, 2007; Trainin & Swanson, 2005; Winne, 1995, 2005; Zimmerman, 2008). Self-regulated learning is therefore perceived as a key to successful learning in school and beyond (Kuo, 2010; Pintrich, 2002; Winne, 1995; Zimmerman, 2002).

The teacher, as a component of the learning environment, can play an important role in stimulating students and developing student self-regulated learning (Hattie, 2009; Kuo, 2010; Reeve, 2009). Teachers have the opportunity to arrange educational environments in order to facilitate students to gain experiences with and learn different types of learning skills (Minnaert & Vermunt,

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http://dx.doi.org/10.1016/j.tate.2014.01.005

2006; Schunk & Zimmerman, 2007; Zimmerman, 2002). Most research on teacher practices for student self-regulation focuses on general education, but self-regulation skills are also important for students in vocational education. Self-regulation enables students to study more consciously, helping them prepare for work, life and further education (Pintrich & De Groot, 1990). For teachers in secondary vocational education, the task of developing student self-regulation is a major challenge because of the diversity in curricula and cognitive levels, learning difficulties (e.g. dyslexia), students' behavioural problems and the turbulent biological, cognitive and socially challenging life stage of these students (Wigfield, Byrnes, & Eccles, 2006). Student diversity places great demands on the pedagogical practices of teachers, and it is important to gain insight into these practices to stimulate student self-regulated learning.

1.1. Student regulation of learning (SRL)

Self-regulation theory originates from the psychological tradition of theory and research on self-control (Schunk, 2005), from Bandura's socio-cognitive theory of human functioning. An underlying assumption of Bandura's theory is that individuals are proactive, self-regulating agents rather than being passively shaped by their surroundings (Bidjerano & Yun Dai, 2007). Consistent with this tradition, Zimmerman (1995) and Pintrich's (1995) conceptualisations of self-regulated learning reflect a social cognitive perspective on self-regulation. Under the social cognitive framework, self-regulation in the academic setting has been viewed as a set of skills that can be developed rather than as unchangeable or genetically rooted. Although research has shown that self-regulation develops from early childhood to adolescence, training and intervention studies have supported the argument that self-regulation can be successfully taught to students at all grade levels (Bidjerano & Yun Dai, 2007). Pintrich (1995) posited that students could learn to self-regulate in academic settings through self-reflection and practice. Therefore, it is incumbent on teachers to cultivate self-regulated learning skills (Bidjerano & Yun Dai, 2007; Cazan, 2013). However, research on the development of self-regulated learning skills is not recent: the long history of international attention on research on self-regulated learning is described in the next paragraph.

Dewey wrote about 'learning to think' (de Jong, 1992) as early as 1910. In response to research on memory strategies, Flavell and Salatas coined the term 'meta memory' in 1971 (Salatas & Flavell, 1976), which Flavell further elaborated as 'metacognition' (Flavell, 1979). Flavell interpreted metacognition as "(…) one's knowledge concerning one's own cognitive processes and products or anything related to them, e.g. the learning-relevant properties of information or data (…)" (Flavell, 1976, p. 232). However, according to Flavell, metacognition "refers, among other things, to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal" (Flavell, 1976, p. 232). Therefore, Flavell proposed the distinction between self-knowledge and self-regulation. In subsequent years, Brown and others have determined self-regulated learning to be a "… thinker's knowledge, control and coordination of his own cognitions" (Brown & DeLoache, 1978 as referred to in de Jong, 1992, p. 6).

More recently, three essential dimensions of self-regulation were introduced: knowledge of processes, cognitive and affective states; the ability to monitor the inquiry process; and the willingness to regulate the inquiry process (Borkowski, Chan, & Muthukrishna, 2000; Pintrich, Wolters, & Baxter in Akyol & Garrison, 2011). Self-regulated learning is viewed as a process in which students actively and constructively monitor and control their motivation, cognition, and behaviour (Aldrige et al., 2012; Järvela, Järvenoja, & Malmberg, 2012; Pintrich, 2004; Pintrich & De Groot, 1990).

Research conducted by Zimmerman (2002) has observed that self-regulated learners take control of their own learning process by, for example, setting proximal, attainable goals; being learning-oriented; understanding that different learning tasks require different strategies; and tending to use the most appropriate learning strategies effectively. Self-regulating learners can adapt their learning strategies to the immediate requirements of each particular learning situation (Bidjerano & Yun Dai, 2007; de Jong, 1992; de Jong, Kollöffel, van der Meijden, Kleine Staarman, & Janssen, 2005). Knowledge, skills and attitudes can be transferred from one learning context to another and from learning situations in which this information has been acquired to a leisure or work context (Boekaerts, 1999; van Grinsven & Tillema, 2006).

Because peers, home and other rules, communities and cultures are involved, learning is more than a dualistic setting as subject-object, learner-knowledge or teacher–learner (Sannino, Daniels, & Gutiérrez, 2009). However, in this broader activity system of the learner as a component of the learner's school activity system, the teacher can play an important role in encouraging self-regulated learning (Kuo, 2010; Reeve, 2009). In the next section, this topic is explored in depth.

1.2. The teacher- and self-regulated learning

Developing self-regulated learning is similar to becoming one's own teacher by gradually assuming control procedures that are initially performed by a teacher, coach, etc. (Simons, 1987; Vermunt & Van Rijswijk, 1988). In this process of learning to regulate, the importance of sharing cognitive experience is emphasised (Schraw & Dennison, 1994; White, Frederiksen, & Collins, 2009). Flavell (1987) wrote that metacognition must "communicate, explain, and justify" one's thinking to the self and others. Other authors state that metacognition is facilitated through talking about and discussing metacognition (Brown, 1987; Hmelo-Silver, 2004; Larkin, 2009). Most studies show that students can be trained to extend their metacognitive knowledge base and increase its coherency (Boekaerts & Corno, 2005). To promote student self-regulation, teachers must help students to engage flexibly and adaptively in their metacognitive activities (e.g. task analysis, strategy selection and self-monitoring). Teachers can help students in the process of becoming self-regulating learners in which they learn to regulate their behaviour to improve their academic learning and performance (Cazan, 2013).

A teaching model that facilitates and enhances self-regulated learning is referred to as process-oriented teaching (Vermunt, 1994). Process-oriented teaching implies that the external control of the learning process by teachers gradually shifts to an internal control over the learning process by the students themselves. Vermunt (2003) defined an external to internal dimension of self-regulated learning, in which regulation refers to the control of content, the course and outcomes of the learning process. The theories of Bereiter and Scardamalia (1989) and Biggs (1996) indicate that there are differences between the extent to which there is strong, shared or loose teacher control in the interplay between teacher- and student-regulated activities. Boekaerts and Simons (1995) distinguish practices by three educational *regimes*, in which learning functions must be performed either by the teacher and/or the student. Learning functions in this context are observed as psychological functions, which must be performed during the learning process (Shuell, 1988). The educational regimes differ in the regulation mode by the teacher or the student.