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## Eliciting classroom motivation: Not a piece of cake

Motivation is a word that is used very often in daily life. But what does it mean? Every user has its own definition when using or referring to this concept. Likewise, the definition of classroom motivation is in the eye of the beholder. From an adult perspective, students are motivated when they are following instructions and doing what they are told to do by the teacher. From a student perspective, classroom motivation might be having a good time with teachers respecting them.

Most people have an opinion on classroom motivation and on how to establish it; why then is it so difficult to have motivated students? Most of the time, students are only being judged on their results. School is not intended for fun: students are commonly judged by their grades. So why should we, researchers and teachers, bother about classroom motivation? The answer is simple: Motivation is crucial for classroom performance. A large body of research shows that high classroom motivation predicts good classroom performance (e.g., Boekaerts & Corno, 2005; Meece, 1994; Pintrich & Schrauben, 1992; Ryan & Deci, 2000; Schunk, 1991). For instance, when students enjoy learning mathematics, they will get higher grades in their mathematics course (Ahmed, 2010). Even psychological wellbeing largely depends on classroom motivation (e.g., Kasser & Ryan, 2001; McHoskey, 1999; Sheldon, Ryan, Deci, & Kasser, 2004; Williams, Cox, Hedberg, & Deci, 2000). Low classroom motivation has more negative consequences, such as student dropout (Legault, Green-Demers, & Pelletier, 2006) and teacher burnout (Grayson & Alvarez, 2008). Moreover, students that drop out of school show unhealthier behaviour and have riskier attitudes with regard to their physical and mental health (Archambault, Janosz, Marizot, & Pagani, 2009). In 2009, 9 percent (185.000) of the students in secondary education in The Netherlands dropped out of school without a diploma (CBS, 2010a).

Furthermore, although each generation complains about *today's* youth, the media increasingly report on negative classroom behaviour in adolescents and many teachers complain about maladaptive social behaviour in the classroom (Koerhuis, 2007). Several researchers have shown that motivation generally decreases in the course of schooling (e.g., Groves, 2005), and there is a general concern that (intrinsic) motivation is low (e.g., Boekaerts & Martens, 2006; Legault et al., 2006; Manalo, Kovasu, Hashimoto, & Miyouchi, 2006; Saab, Van Joolingen, & Van Hout-Wolters, 2009; Vansteenkiste, Simons, Lens, Soenens, Matos, & Lacante, 2004). Only with sufficient external pressure (e.g., exams, withholding study credits) can some students be set to work, while others appear motivated: 'Five minutes before the end of a lesson, students may be waiting

impatiently for the bell to ring or be so engaged in the lesson that they are quite unaware of the time' (p. 460 Tsai, Kunter, Lüdtke, Trautwein, & Ryan, 2008).

*1.2. Eliciting classroom motivation in pre-vocational secondary education*

This thesis was set up and conducted in the Netherlands within pre-vocational secondary education. Compared to international educational systems, the secondary educational system in the Netherlands is unique (see Figure 1). In the Netherlands, secondary education encompasses schools providing pre-university education (VWO), general higher secondary education (HAVO), and pre-vocational secondary education (vmbo). Pre-vocational secondary education is the lowest level of secondary education and is attended for four years by about 60% of the Dutch students between 12 and 16 years of age as a preparation to vocational training. This type of secondary education is divided into four levels, with more time spent on theory at the highest level and more time spent on practice at the lowest level respectively.Strikingly, motivation problems in pre-vocational secondary education are considerably higher than in any other educational context in the Netherlands (e.g., Dijsselbloem, 2008; Van der Veen & Peetsma, 2009). Pre-vocational secondary education has an unfavourable reputation. Occasionally, parents persist in attempting to get their child admitted to general higher secondary education, even if this is not in line with test results and advice from the primary school teachers (CBS, 2008; CBS 2010b). This might result in being transferred to pre-vocational secondary education at a later point in the school career. Students then might experience a loss of motivation and risk dropping out of school (Peetsma & Van der Veen, 2008). As long as the media stirs up the unfavourable image with their negative stories, the reputation of pre-vocational secondary education remains negative. In the meantime, students in pre-vocational secondary education often have low perceived competence and greater fear of failure (Peetsma, 1996). In other words, eliciting motivation in education is very important and in pre-vocational education we might even call it crucial.

However, the awareness that classroom motivation is critical for classroom performance is one thing, eliciting classroom motivation is another. Many practitioners will agree that establishing student motivation is by no means easy or straightforward. But the good news is that former research in other contexts has shown that it is possible to boost motivation. This thesis aims to investigate strategies to influence classroom motivation in pre-vocational secondary education that are easy to incorporate in the classroom and have already proven to be effective in other contexts. Those strategies are derived from Ryan and Deci's self-determination theory (SDT: Deci & Ryan, 1985; 2000) and Zimmerman's theory on self-regulation (Zimmerman, 2000; 2008). These theories emphasize the importance of providing specific information about the *why's* of pursuing learning goals (why information) and *how* to approach classroom tasks and assignments (how information). Below, we will describe what we mean by why and how information.

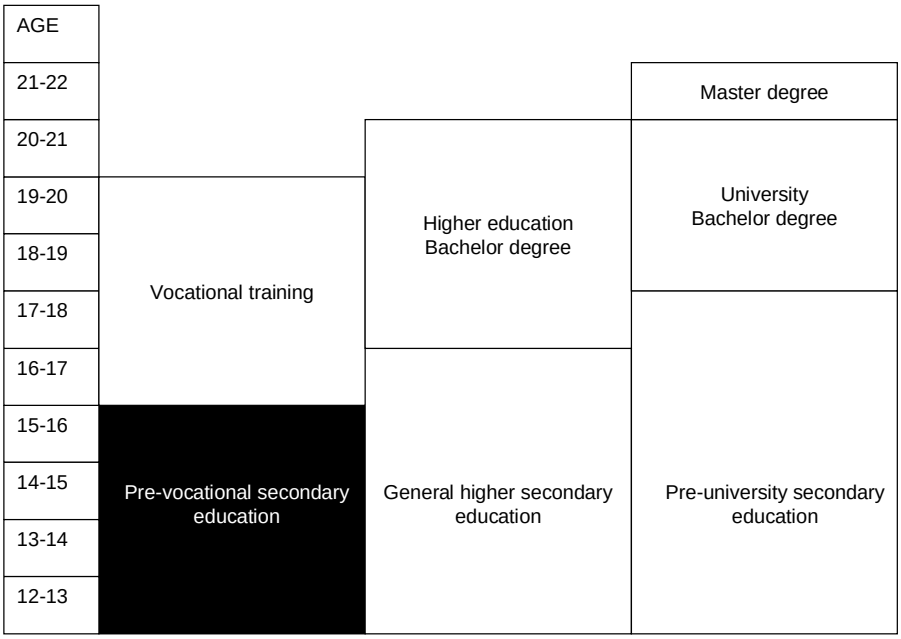


*Figure 1.* Dutch system for secondary education

*1.3. Optimizing motivational orientation according to the Self-determination theory perspective*

Self-determination theory (SDT) has become an often cited and very influential theoretical perspective on motivation. Research within this framework emphasizes the importance of creating a favourable learning environment that elicits intrinsic motivation. *Intrinsic motivation* is the natural tendency to engage in activities for the inherent joy an activity gives; it increases performance, persistence and is a prerequisite for psychological well-being. *Extrinsic motivation*, where behaviour relies on external rewards, is considered to be inferior to intrinsic motivation with regard to psychological well-being on the long-term (Deci & Ryan, 1985; Ryan & Deci, 2000). Increased intrinsic motivation coincides with more autonomous and self-determined behaviour, which results in higher well-being caused by the satisfaction of the underlying psychological needs (i.e., autonomy, competence, and relatedness; Deci & Ryan, 2000). Many studies have proved that intrinsic motivation leads to favourable behaviour, including persistence, preference for understanding, and curiosity, which in turn result in better performance (Ryan & Deci, 2000).

Quite often, it is impossible to really change a learning environment and for instance alter the amount of autonomy that students have. One SDT approach to establish an intrinsic orientation that is easy to incorporate in education, aims at influencing students' motivational beliefs and perceptions about the intrinsic value of a specific task. It is assumed that by emphasizing that students will enjoy a task either because of the usefulness of the trained skills for everyday life or because the

task is fun, this promotes intrinsic motivation. We refer to this kind of information *as intrinsic motivational why-information*. Likewise, an extrinsic orientation can be established with *extrinsic motivational why-information* that emphasises the importance of showing off a good performance to peers and the teacher. The effects of the strategy in influencing motivational orientation by inducing motivational beliefs and perceptions have already been reported for students in higher education during physical education classes (Simons, Dewitte, & Lens, 2003) and during language related tasks (Martens, De Brabander, Rozendaal, Boekaerts, & Van der Leeden, 2010; Vansteenkiste et al., 2004; Vansteenkiste, Lens, & Deci, 2006; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). Moreover, a few studies within secondary education have also been reporting on the effects of motivational information during physical education classes (Vansteenkiste, Simons, Lens, & Soenens, 2004) and during language related tasks (Schaffner & Schiefele, 2007). We retrieved one study in primary education that also reported on the effects of motivational information during a language class (Vansteenkiste, Timmermans, Lens, Soenens, & Van den Broeck, 2008).

In these studies, students were provided with written motivational information either intrinsic or extrinsic. Students provided with information on the fun and short-term intrinsic usefulness of the task at hand (i.e., intrinsic motivational information) showed higher self-report scores on intrinsic motivation, tangible persistence scores, and better test score performance than students provided with extrinsic information.

### *1.4. Optimizing motivational orientation according to the Self-regulation theory perspective*

Self-regulation theory (SRT) has also addressed the question how students' motivational orientation may be optimized. The importance and impact of self-regulation strategies on the learning process is extensively described by Boekaerts (2006) and Zimmerman (2000). SRT is concerned with *how* individuals regulate their own learning processes. By activating and sustaining motivation, cognition, behaviours, and affects, students can attain their goals (Zimmerman, 1986). Information on how to approach an assignment helps students to improve their ability to successfully complete the assignment (Eccles & Wigfield, 2002). Moreover, it avoids self-doubt and low confidence, leading to impediment of effort and interest (Boekaerts, 2006).

The capacity to modulate behaviour involves learning strategies (Rozendaal, 2002; Zimmerman, 2008), which can be divided into cognitive and metacognitive self-regulatory skills (e.g., effort regulation and metacognition) and resource management skills (e.g., time management). Within the present research, we refer to providing motivational information with regard to how to use self-regulatory strategies, as *motivational how-information*. For example, telling students that it is important to concentrate during the assignment and to think of a strategy beforehand is motivational how-information. The difference with why-information is that how-information does not concern the reason why a learning

assignment is relevant or fun. How-information concerns information on how to successfully complete the assignment.

Nuckles, Hubner, Dumer, and Renkl (2010) showed that the quality of learning outcomes on the short-term increase when students are prompted with how-information. Zimmerman and Martinez-Pons (1986; 1988) showed that when self-regulatory skills increase, measures of course performance and academic grades also increase.

### *1.5. Research questions and structure of the thesis*

This thesis will attempt to contribute to the quest of practitioners and researchers to find guidelines on how to establish a healthy motivational climate in the classroom. The current thesis tries to address the following general question: What is motivation and how to elicit it in the classroom? This dissertation addresses five specific research questions:

(1) How have different theories of motivation contributed to our knowledge of how the motivation system works in the classroom?
(2) Which motivation constructs derived from different motivation perspectives predict performance on a novel task best?
(3) Can we replicate the findings accrued at other school levels? More concretely, can we elicit intrinsic motivation in pre-vocational secondary education with motivational why- and how-information?
(4) Do boys and girls differ in their response to intrinsic and extrinsic motivational information?
(5) Is the model derived from self-determination theory applicable across learning situations?

In the following chapters, one theoretical and four empirical studies address these questions. Though, each chapter highlights a different set of hypotheses, some analyses throughout the chapters were based on the same sets of data. We will explain here how and why we used the diverse data sets for the hypotheses addressed in each separate chapter. The *first data set* was collected within secondary education and addresses the mechanisms that underlie motivated behaviour. In Chapter three, these cross-sectional data are described in more detail. Two data sets, collected during two waves within pre-vocational secondary education, represent *data set two and three*. These data were collected with an experimental design to test the effect of motivational how-information (data set three) and why-information (data set two and three). In Chapter four we used data set three to describe the general effects of the motivational why- *and* how-information. We used data sets two and three in Chapter five to focus explicitly on gender effects of motivational why-information during an unfamiliar (data set two) and a familiar task (data set three). The *fourth data set* was collected within pre-university secondary education. These data were used as a reference sample within Chapter five. Finally, in Chapter six we also used data set two and three to describe how the SDT model applies to pre-vocational secondary education at the different

waves. The five papers that constitute the chapters in this dissertation are written in such a way that they can be read independently. Consequently, some sections of the chapters have some inevitable overlap.

Throughout this thesis the metaphor of a motivation cake illustrates the various perspectives on classroom motivation. Different slices and tastes of the cake refer to the more than 30 motivation theories that have been developed over the years. This will be discussed in Chapter two (theoretical chapter). In Chapter three, motivation constructs from three different slices of the motivation cake are investigated in tandem in order to predict classroom performance. Chapter four describes an attempt to spice up students' motivation by investigating a motivational intervention. The effect of the SDT ingredients for different subgroups is described in Chapter five. The focus in Chapter six is on whether different occasions, elicit different perceptions of flavour of the self-determination theory slice of the motivation cake. Finally, in Chapter seven we conclude that eliciting intrinsic motivation is not a piece of cake. In the remaining sections of this chapter, we will elaborate on the metaphor that we will use in this dissertation.

### *1.5.1. Chapter 2: The motivation cake*

The question: "Why do individuals do the things they do?" has received continued research attention. Historically, psychologists argued that motivation energizes and guides behaviour toward desired outcomes and away from undesired ones. If we look at the history of motivation, we observe a long quest to discover the energy sources that make people move. Over the years, many constructs have been evoked and the various conceptualizations of motivation make it difficult to provide a straightforward answer to the question what motivation really is. Also as practice reveals, teachers and educators find it difficult to explore the motivation jungle on their own and to choose effective strategies to enhance students' motivation. Therefore, the aim of this theoretical chapter is to provide an overview of different motivation theories that together form the motivation cake and to answer the following questions: What is the relevance of the various definitions of motivation for educational practice?

### *1.5.2. Chapter 3: Three slices of the motivation cake*

The various theoretical viewpoints on motivation make it hard to determine which model has the best potential to provide valid predictions on classroom performance. The empirical study described in Chapter three was designed to explore motivation constructs derived from three different motivation perspectives that predict performance on a novel task. Motivation constructs from self-determination theory, self-regulation theory, and achievement goal theory were investigated together in an ecological valid context within secondary education. With this chapter we try to integrate constructs from three slices of the motivation cake in order to understand the impact of motivation cake on performance better. The main question we try to answer in this chapter is: Which constructs from three different motivation theories predict classroom performance best?

*1.5.3. Chapter 4: An attempt to spice up motivation*

We already mentioned that teachers and non-motivation researchers find it hard to use motivation constructs for interventions. In order not to choke by eating the whole motivation cake, we zoom in into two slices of the cake. In Chapter four we zoom in into the ingredients of two pieces of the motivation cake in an attempt to spice up the students' motivation. Zimmerman's (2000) self-regulation model and Ryan and Deci's (2000) motivation theory are used to provide strategies to optimize motivational orientation in the classroom. The strategies investigated in this chapter aim at influencing the task specific motivational beliefs and perceptions that students hold about the why's of the learning goal and the use of strategies to approach the learning task. Former research yielded positive effects of these strategies for intrinsic motivation, persistence, performance and the use of self-regulatory skills. These results were obtained with students at other school levels. We have tried to replicate these findings in pre-vocational secondary education. The questions we attempt to answer within this chapter are: Are pre-vocational secondary education students as receptive for motivational information as students in higher education? Do these strategies really spice up their motivation?

*1.5.4. Chapter 5: Gender differences within the self-determination theory piece of cake*

In Chapter five, the effect of the ingredients of self-determination theory on different subgroups is described. Declined classroom motivation during secondary education particularly manifests itself in boys. As a result, girls outperform boys in their classroom performance and motivation. This chapter explores this issue and investigates whether the intervention according the SDT ingredients has a different impact on boys and girls. Furthermore, we also describe the differences between a novel and familiar task and compare responses of pre-vocational secondary education students with pre-university secondary school students. The main question we attempt to answer in Chapter five is: Do boys and girls differ in their response to the provided intrinsic and extrinsic motivational information during an unfamiliar and during a familiar task?

*1.5.5. Chapter 6: The motivation cake: Do different learning occasions elicit, different perceptions of flavour?*

Whereas Chapter five describes gender differences within the same context, Chapter six investigates whether groups of students may have different responses within two different learning contexts, namely during an unfamiliar and a familiar task. In other words: "Do different learning occasions elicit different perceptions of flavour of the Self-determination theory slice of the motivation cake?" Self-determination theory assumes that perceived competence, relatedness and autonomy are prerequisites of intrinsic motivation at all time and that, in turn, intrinsic motivation predicts performance and persistence. In Chapter six, the main question we attempt to answer is: Is SDT applicable across situations?

*1.5.6. Chapter 7: Spicing up motivation is not that straightforward*

In Chapter seven we present our conclusions and suggest new avenues that researchers may take. The main conclusion is that eliciting intrinsic motivation is not a piece of cake. In contrast with the results reported by other motivation researchers, we did not find the same positive results of motivational why- and how-information. This thesis contributes to opening up the discussion on which role practitioners and researchers could fulfill to increase individual students' motivation in the classroom.

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