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Motivational developments in primary school: Group-specific differences in varying learning contexts

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CHAPTER 1

GENERAL INTRODUCTION

Motivation is essential to students' learning. Motivation for school has been found to affect achievement outcomes beyond students' background characteristics, personality and intelligence (Gottfried, 1985; Gottfried, Marcoulides, Gottfried, Oliver, & Guerin, 2007; Spinath, Spinath, Harlaar, & Plomin, 2006; Steinmayr, 2009, Steinmayr & Spinath, 2009; or for a review see Wigfield & Cambria, 2010). Previous research has consistently found a decline in students' motivation for school after the transition to secondary school. In secondary school, students' motivational beliefs are found to decrease, which goes alongside a decline in motivated behaviours, such as investment in their school work (De Fraine, Damme, & Onghena, 2007; Gottfried, Fleming, & Gottfried, 2001; Skinner, Furrer, Marchand, & Kindermann, 2008; Van der Veen & Peetsma, 2009). Although research on motivational developments in primary school is scarce, there are some indications that the decline in motivation may start before students make the transition to secondary school (e.g., Nurmi & Aunola, 2005; Skinner et al., 2008; Spinath & Spinath, 2005; Stoel, Peetsma, & Roeleveld, 2001). Given the strong relation between motivation and students' achievement outcomes, this decline can be considered worrisome. It suggests that those students who are not optimally motivated may not achieve to their potential. Moreover, a desire for learning, feeling competent, and a willingness to invest effort are not only important because they could potentially enhance achievement, they could also be considered to be desirable in their own right. This dissertation therefore aimed to examine the nature of motivational developments during upper primary school and the relations between these developments and achievement growth, taking into account differences in students' socio-economic and ethnic background as well as gender differences.

Motivational developments cannot be understood without taking the learning context into consideration. It is increasingly recognized that the learning context is an important factor in explaining students' motivation for school and their learning outcomes (Pintrich, 2004). Therefore, this dissertation focused on how different aspects of the learning context, in particular innovative learning and the classroom composition, are related to developments in students' motivation during upper primary school. In comparison to more traditional learning environments, innovative learning environments in which students get a more active role in their learning process are believed to foster students' motivation (Volet & Järvelä, 2001; Boekaerts & Niemivirta, 2000). It will be addressed whether aspects of innovative learning are indeed related to developments in motivation. Moreover, not much research has addressed the question whether innovative learning is similarly beneficial for different student populations. Many schools in the Netherlands are quite homogenous in classroom composition, which implies that students from groups that on average lag behind in school – students with ethnic minority or socio-economically disadvantaged backgrounds – are often taught among students with similar backgrounds (Peters & Walraven, 2011). The extent to which teachers adopt innovative teaching practices may be related to the characteristics of their classroom population. In order to examine whether these aspects of the learning context may contribute to existing achievement gaps and to a potential decline in motivation during upper primary school, a second aim of this dissertation was therefore to examine to what extent classroom composition and innovative learning are related to developments in motivation and achievement. Students' ethnic and socio-economic backgrounds, as well as gender differences were taken into account.

THEORETICAL FRAMEWORK

MOTIVATION FOR SCHOOL

Contemporary motivation theory has built on the work of Atkinson (1957, 1964) and McClelland (1961). In their work in the 1950's and 1960's, behaviour of individuals was considered the result of internal "drives" or "motives". These were considered trait-like characteristics that direct individuals towards actions and can be described as learned, yet stable individual dispositions. Two main achievement motives were formulated: striving for success and avoiding failure. Atkinson (1964) furthermore argued that in addition to motives, also the probability for success and the incentive value of the task at hand were predictors of achievement behaviour. A combination of a high striving for success, feeling able to succeed, and valuing the task was assumed to lead to individuals to engage in achievement behaviours. While this early work focused on internal drives, needs, and motives, more recent theories of motivation have shifted the focus more towards cognitions and beliefs (Maehr & Meyer, 1997). Yet, the formulation of motives, expectancies, and values as the underlying forces of achievement behaviour is still shaping current motivational theories.

In line with the early work of Atkinson (1957, 1964) and McClelland (1961), current theories of motivation underline that individuals strive towards success and avoid failure. What is considered as success or failure depends on the type of goals that are being pursued. Achievement goal theory (Ames, 1992; Ames & Archer, 1988; Dweck, 1986; Elliot & Dweck, 1988; Nicholls, 1984) posits that individuals consciously pursue certain goals and this process of goal pursuit guides their behaviours. In the context of schooling, a distinction is made between task-oriented goals and ego-oriented goals (e. g., Nicholls, 1984). Task-oriented goals, sometimes also referred to as learning goals (e.g. Dweck, 1986) or mastery goals (e.g. Ames, 1992), reflect an orientation towards developing understanding, increasing skills and competence and mastering tasks at hand (Ames, 1992, Dweck, 1986; Maehr & Midgley, 1991; Pintrich 2000). Students

adopting task-oriented goals have been argued to consider ability a malleable characteristic which can be enhanced by effort. Subsequently, such students enjoy challenges and show greater persistence when faced with difficulties (Dweck, 1986). Ego-oriented goals on the other hand, also referred to as performance goals (e.g. Ames, 1992) or relative ability goals (Urdu, 1997), reflect an orientation toward demonstrating ability relative to others. Individuals with ego-oriented goals subsequently are concerned with outperforming others or trying not to perform less than others (Ames, 1992; Dweck & Leggett, 1988). Task-oriented goals have been consistently associated with adaptive learning behaviours and outcomes, such as higher engagement in learning and more use of deep learning strategies (see for example Anderman, Austin, & Johnson, 2002, Maehr & Zusho, 2009 for reviews), as well as higher achievement outcomes (see the meta-analysis by Hulleman, Schrager, Bodmann, & Harackiewicz, 2010). Ego-oriented goals however, have been associated with positive as well as negative learning behaviours and outcomes (Hulleman et al, 2010). Although ego-oriented goals are relevant to motivation, this dissertation has limited its focus to task-oriented goals that have been unequivocally associated with positive learning outcomes.

Students' expectancies are another important construct in current motivational theories. Expectancies refer to one's perceived academic competence (Eccles & Wigfield, 2002). Expectancies are closely related to competence beliefs. They are however conceptually distinct. Whereas competence beliefs focus on present abilities, expectancies are predictions for future outcomes (Pajares, 1997). Academic self-efficacy is the most thoroughly studied expectancy-related concept. It refers to judgments about one's capabilities to carry out actions that are needed to complete academic tasks successfully (Bandura, 1977). Self-efficacy is rooted in Social Cognitive Theory (Bandura 1977; 1986; 1993; 1997; 2001; Bandura & McClelland, 1977), which assumes that motivated behaviour is goal-directed and initiated and sustained by the extent an individual feels efficacious in performing the tasks at hand. Self-efficacy is found to be more predictive of effort and achievement outcomes than any other aspect of

motivational beliefs (e.g., Eccles & Wigfield, 2002; Pajares, 1997; Peetsma, Hascher, Van der Veen, & Roede, 2005).

Motivational beliefs or cognitions are believed to be reciprocally associated to performance outcomes through the learning behaviours they instigate (Schunk, Pintrich, & Meece, 2008). Investment of students in their schoolwork, which Maehr and colleagues have referred to as personal investment (e.g., Maehr & Braskamp, 1986; Maehr & McInerney, 2004; Maehr & Meyer, 1997) is the result of the motivational beliefs. Students' investment in school thus refers to the behavioural activity which results from motivational beliefs. School investment can vary in terms of the intensity, persistence, and direction of school-related behaviours (Maehr & Meyer, 1997; Pintrich, 2004; Schunk, et al., 2008).

As described, motivation was originally mainly considered an innate characteristic of an individual that affected (learning) behaviour (Schunk et al, 2008). In more recent theories, however, the dynamic, contextual nature of motivation is stressed. Accordingly, motivation will depend upon the characteristics of the specific situation in which learning takes place (e.g., Boekaerts, 2001; Linnenbrink & Pintrich, 2002; Zimmerman, 2008). Niemivirta (2002) argued that these different views – this situational, dynamic view on motivation on the one hand, and the concept of motivation as a more stable disposition on the other hand – are not contradicting, but rather complementary. A person can have certain preferences or tendencies to behave in certain ways which are characteristic for this individual. At the same time, characteristics of a situation can induce certain beliefs or behaviours, especially those for which a person has a general preference (Niemivirta, 2002).

Motivation research has been described as “fragmented and diffuse” (Pintrich, 2000, p. 667) as there are various different perspectives on the concept of motivation, both theoretical and methodological (Wentzel & Wigfield, 2009). These different perspectives often include related, but slightly different concepts. Notwithstanding these conceptual differences, contemporary theories of motivation, also share a number of important basic assumptions (Schunk, et al., 2008):

1. Motivational processes are believed to underlie human behaviour.
2. Motivation involves cognitions, stressing the causal role of mental processes.
3. The relations between motivation and learning behaviours and achievement are believed to be reciprocal.
4. Motivation is considered a complex phenomenon that is dependent on personal, social, and situational characteristics.
5. Motivation is an aspect of human development and changes over time.
6. Motivation can vary as the result of individual, group and cultural differences.

In this dissertation, these six assumptions guide our conceptualization of motivation. Furthermore, the focus of this dissertation is on those concepts that have unambiguously been associated with adaptive learning behaviour and academic performance, namely task-orientated goals, self-efficacy, and students' investment in school.

LEARNING CONTEXT

Factors associated with the learning context are believed to affect students' motivation for learning (Pintrich, 2004; Urdan & Schoenfelder, 2006), because in different learning contexts, children experience different learning opportunities. Hickey and McCaslin (2001) described three possible perspectives on how the learning context is related to student motivation. First, the behavioural or empiricist perspective describes the learning context as the only determinant of learning. Learning is considered a bottom-up process during which associations are formed, strengthened or adjusted. In this view, motivation is by definition extrinsic. Accordingly, academic motivation is solely the result of extrinsic cues and considered an extrinsically activated activity. Contrarily, according to the cognitive or rationalist perspective, learning is a top-down process. Motivation is mostly determined by expectancy-related and

value-related constructs, and is considered internal. In this view, the learning context only provides expectancy-related or value-related information. Another way to look at the relation between the learning context and students' motivation for school is the situative perspective, which has increasingly affected ideas about what constitutes learning. In line with current motivational perspectives discussed above stressing the dynamic nature of motivation (Niemivirta, 2002; Schunk et al., 2008), the situative perspective does not consider learning as a process of mere knowledge acquisition. Instead, engagement in learning is considered a process of active and meaningful participation in a learning context. In line with the situative perspective, Hickey and McCaslin (2001) argue for an approach in motivation research in which there is a "continued reliance on individually-oriented constructs ... as well as enhanced study of social and environmental preconditions and interactions." (2001 p. 44). These interactions between the learning context and individual characteristics are also central to the "person-environment fit" perspective (Cronbach, 1967; Hunt 1975; Roeser, Eccles, & Sameroff, 2000). When schools are able to provide students with a learning context that fits with their individual needs, skill levels, interests, developmental stage, and preferences, they provide an optimal environment for students to be motivated and achieve to their potential. A good fit between students and their learning environment could thus prevent or decrease the decline in students' motivation.

CLASSROOM COMPOSITION

According to Berliner (2012), relations between the learning context and motivation and achievement are often attributed to teacher effects, but very often they are due to the composition of the classroom, or to the complex interplay between the teacher effects and classroom composition. As children not only learn from their teachers, but also from each other, the social and ethnic composition of the classes students attend affects their learning opportunities. Many schools in the Netherlands, as in other countries, are homogeneous in classroom composition with regard to students' socio-

economic status (SES) and their ethnic background (Bakker, Denessen, Peters, & Walraven, 2011; Karsten, 2006; Karsten, Felix, Ledoux, Meijnen, Roeleveld, & Van Schooten, 2006). Ethnic minority students and low SES students are often taught at segregated “disadvantaged schools” among other ethnic minority or low SES students, while ethnic majority students, especially those from high SES backgrounds, attend more “privileged schools” (Bakker et al., 2011).

In general, segregation is often believed to lead to adverse outcomes for those students in disadvantaged classrooms. The common held fear is that students groups that are considered disadvantaged based on their average achievement levels, in particular ethnic minority students or students from social-economically disadvantaged backgrounds, will “bring down” other students in the classroom and that these students themselves will not be able to benefit from the potential of more privileged classrooms (Bakker et al., 2011). There are a number of different explanations of the underlying processes through which a disadvantaged classroom composition would negatively affect students.

The *instructional quality explanation* states that quality is lower in disadvantaged classrooms because of several reasons. Teachers adapt their general instructional level to the average level of their students (Beckerman & Good, 1981), teacher expectations may be lower (Jussim, Eccles, & Madon, 1996; Jussim & Harber, 2005; Van den Bergh, Denessen, Hornstra, Voeten & Holland, 2010) and as a result the standard may be lowered (Westerbeek, 1999). Moreover, teachers may prefer to work at schools with more privileged student populations (Karsten et al, 2006) and disadvantaged schools may therefore have more problems finding qualified and motivated staff (OECD, 2005).

The *language contact hypothesis* brought forward by Driessen, Doesborgh, Ledoux, Van der Veen, and Vergeer (2003) furthermore states that ethnic minority students, who usually speak a different language at home than the language spoken at their school, in segregated classrooms will have less opportunities to come into contact with the school language than ethnic minority students in classrooms with more majority students. Accordingly, ethnic minority students

in integrated classrooms will thus become more proficient in the language spoken at school, which will also help them in other academic subjects as well (Driessen et al., 2003). The language contact hypothesis may hold especially for ethnic minority students, but to some extent it may also hold for socio-economic background differences, considering the distinction in ‘restricted’ and ‘elaborated’ code (Bernstein, 1964).

Moreover, the *social contagion explanation* states that through social interactions students affect each other’s motivation and learning outcomes and students will thus become more alike, either positively or negatively (Erbring & Young, 1979; Kelly, 2009). Likewise, the *normative explanation* states that students will become like their peers because of the norm that is being set in the classroom (Goldsmith, 2011). Based on these two explanations, it is often assumed that students in disadvantaged classrooms will ‘bring each other down’ in terms of motivation and achievement. In disadvantaged classrooms, students are often believed devalue achievement (Goldsmith, 2011) and group dynamics may lead a culture of where motivation is discouraged (Paulle, 2002).

While most of the aforementioned explanations suggest that being in a classroom with many ethnic minority or low SES students will negatively impact motivation and achievement, others have argued that students in disadvantaged classrooms could also benefit from school segregation. Students from more disadvantaged backgrounds have more to gain from education in terms of upward mobility (Van der Veen, 2003), suggesting that – also in line with the aforementioned *normative explanation* – students in ‘disadvantaged’ classrooms may set a norm of high motivation and may encourage achievement. Moreover, according to the *big-fish-little-pond effect*, students form their self-concept based on their own ability levels as well as on a comparison with the ability levels of classmates. When students are in a classroom where overall ability levels are higher than their own ability level, their expectancies about their own abilities are expected to develop more negatively (Marsh, 1987). In more disadvantaged classes where overall ability levels are lower, self-efficacy and consequent learning outcomes are more likely to develop more positively.

The *specialization hypothesis* furthermore suggests that in disadvantaged classrooms, teachers may be better able to tailor their instruction to the needs of their specific classroom (Driessen et al., 2003). This could for example refer to the pace or content of instructional practices, such as focusing more on language in classrooms with many students with language delays. Specialization may also refer to adapting the instructional style to students' particular backgrounds. Teacher expectancy literature (e.g., Rosenthal 1994) showed that teacher perceptions of their students' ability or background can affect many aspects of teaching and learning outcomes. As such, teachers in classrooms with different student populations may find different instructional styles suitable for their students. Important sources that shape teacher perceptions are students' ability levels (Madon, Jussim, Eccles, 1997), gender (Madon et al., 1997), social background (Jussim et al., 1996), or ethnic background (Tenenbaum & Ruck, 2007). Perceptions of these characteristics can cause differential teacher behaviours. Most teacher expectancy research has focused on within-classroom differences and subsequent differential teacher practices of teachers toward low versus high expectancy students (Rubie-Davies, 2010). Recently, two studies examined how classroom characteristics affect teachers' instructional strategies, showing teacher perceptions of classroom characteristics affect use of extrinsically or intrinsically oriented motivational strategies (Rubie-Davies, Flint, & McDonald, 2012) and students' learning outcomes (Archambault, Janosz, & Chouinard, 2012), suggesting that also classroom practices may depend on teachers' perceptions of their students. Effects of classroom composition may thus be explained by the instructional style teachers adopt in classes with different student populations.

INNOVATIVE LEARNING

For decades, learning environment research has examined which types of instructional environments are best suited to foster students' motivational needs. Boekaerts and Niemivirta (2000) made a distinction between optimal and non-optimal learning conditions for self-regulated learning to occur. They

argued that classroom environments that foster self-set learning episodes, including learning in a natural context, appear to offer better conditions for motivation than teacher-centred learning environments. The main aim of these ‘innovative learning’ environments is to offer students a more optimal learning environment to increase motivation and enhance learning (Blok et al., 2006).

Innovative learning (IL) refers to a variety of instructional approaches – also referred to as new learning, natural learning, powerful learning, or active learning – that allow for a more active role of students in their own learning process compared to more traditional approaches (Hickey, 1997; O’Donnell, 2012; Schuitema, Peetsma, & Van der Veen, 2011; Simons, Van der Linden, & Duffy, 2000; Wilson, 2011). Aspects of IL include collaborative learning, self-directed, self-regulated learning, authentic learning, and innovative forms of assessment. In recent decades, IL environments have become increasingly popular in many different countries (Wilson, 2011). The theoretical basis of IL lies within socio-constructivism, which describes a wide range of views that share the basic assumption that learning can be defined as an active and social process of constructing knowledge and meaning rather than merely a process of knowledge transmission (Duffy & Cunningham, 1996; Gijbels, Van de Watering, Dochy, & Van den Bossche, 2006; Loyens & Gijbels, 2008; O’Donnell, 2012; Phillips, 1995; Wilson, 2011). In practice, most schools cannot be considered strictly innovative or strictly traditional. IL is a multifaceted concept which entails multiple aspects and schools can vary along a continuum on each of these aspects (Duffy & Cunningham, 1996; Loyens & Gijbels, 2008; O’Donnell, 2012; Phillips, 1995; Wilson, 2011)

The principles of socio-constructivism suggest a different role for teachers in IL environments in comparison to traditional learning environments. Teachers in IL environments focus more on collaborative learning in order for students to construct knowledge in interaction with each other (De Corte, Verschaffel, & Masui, 2004; De Lisi & Golbeck, 1999; Gijbels et al., 2006). Moreover, in IL environments, students mostly direct their own learning in contrast to more traditional learning environments in which the teacher mostly directs the learning process (Bolhuis, 2003; Fosnot, 1996; Gijbels et al., 2006; Land &

Hannafin, 2000; Phillips, 1995; Simons et al., 2000; Wilson, 2011) and teachers focus on the process of learning rather than solely on the learning outcomes (Boekaerts, 1997; Bolhuis, 2003). IL thus tends to emphasize the process by which students learn in order to enhance learning and self-regulatory skills (Boekaerts, 1997; Loyens & Gijbels, 2008). Furthermore, teachers in IL environments provide students with authentic and meaningful learning experiences to elicit a more active learning process in their students (Gijbels et al., 2006; Loyens & Gijbels, 2008; Roelofs & Terwel, 1999). Finally, in order for assessment to connect to these innovative ways of teaching, assessment methods differ from traditional assessment methods. Teachers in IL environments assess student progress in formative rather than summative ways (Birenbaum & Dochy, 1996; De Kock, Slegers, & Voeten, 2004).

In all, IL thus suggests different roles for both teachers and students. Whereas in traditional education, teachers deliver instruction and control their students' learning process, their role shifts to providing an optimal learning context that invites students to actively construct their own knowledge and to provide guidance during learning. Likewise, the role of students shifts from rather passive receivers of instruction to autonomous participants who are actively involved and responsible for their own learning process (Furtak & Kunter, 2012). Theories on IL are therefore highly reconcilable with self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000a). According to SDT, teachers' instructional practices can vary along a continuum that ranges from very autonomy-supportive to very controlling (e.g., Deci, Vallerand, Pelletier, & Ryan, 1991; Reeve & Jang, 2006; Ryan & Deci, 2000a; Stroet, Opdenakker & Minnaert, 2012; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Vallerand, 1997). Autonomy-supportive practices are aimed at nurturing students' inner motivational resources and volitional intentions to act. Students' autonomy can be facilitated by transferring responsibility of the learning process to students, providing choice, connecting to students' interests, providing explanatory rationales, and by creating meaningful and relevant learning activities. Such practices are aimed at increasing students' own willingness to engage in learning activities.

In general, support has been found for a positive relation between different aspects of IL and motivational beliefs (Dignath, Buettner, & Langfeldt, 2008; Guthrie, Wigfield, & VonSecker, 2000; Hänze & Berger, 2007; Hickey, Moore, & Pellegrino, 2001; Lau, 2012; Nie & Lau, 2010; Thoonen, Slegers, Oort, Peetsma, & Geijsel, 2010; Salinas & Garr, 2009; Wigfield & Guthrie, 2010) as well as different aspects of motivated behaviour (Baeten, Kyndt, Struyven, Dochy, 2010; Dignath et al. 2008; Gow & Kember, 1993; Lau, 2012; Nie & Lau, 2010; Marton, & Säljö, 2011; Opdenakker & Minnaert, 2011; Roozendaal, Minnaert, & Boekaerts, 2005; Schuitema et al., 2011; Trigwell, Prosser, & Waterhouse, 1999). Also autonomy-supportive teaching practices have been found to relate positively to student motivation (for a review, see Stroet et al., 2012). However, research on differential effects of IL is scarce and outcomes are not conclusive. Some studies found that students from lower socio-economic backgrounds would benefit mostly from a highly structured, teacher-centered learning environment with much direct instruction focusing on basic skills in which students from these groups lag behind (Guthrie, 1989; Hopkins & Reynolds, 2001; Scheerens & Bosker, 1997). Other studies on the other hand found small differences indicating that disadvantaged student populations benefited from IL in terms of both achievement and non-cognitive outcomes (e.g., Salinas & Garr, 2009) or found no differences in the extent students with different background characteristics benefited from IL (Opdenakker & Minnaert, 2011).

There are several reasons to argue that IL may indeed relate differently to motivational developments and achievement growth for students with different background characteristics. IL environments require active, self-directive, and collaborative types of participation and the academic language required for such learning activities is less typical for interactions in low SES and ethnic minority families (Leseman & De Jong, 2001; Leseman, Scheele, Mayo, & Messer, 2007). Particularly those students from lower socio-economic backgrounds or ethnic minority students with backgrounds from collectivist cultures are believed to be accustomed to more directive, stringent parenting styles (Frosh, 2004; Hermans, 1995; Shucksmith, Hendry, & Glendinning, 1995; Stewart & Bond, 2002).

Types of communication that are required in IL, such as asking why questions or expressing a different opinion, are less likely to be encouraged in their home environments (Heemskerk, Brink, Volman, & Ten Dam, 2005; Pels, Nijsten, Oosterwegel, & Vollebergh, 2006). Due to such cultural differences, traditional teacher-centered learning environments have been argued to suit students from ethnic minority backgrounds better than learning environments in which students self-direct their own learning (Kitayama, Snibbe, Markus, & Suzuki, 2004; Littlewood, 1999; Markus & Kitayama, 1991). Iyengar and Lepper (1999) for example showed that higher levels of student responsibility increased motivation of Anglo American children, but Asian children were more motivated when to perform a task when trusted authority figures made choices for them. Consequently, lower socio-economic backgrounds or ethnic minority students may prefer or feel more comfortable in traditional learning environments, and IL may be less beneficial for their motivation. However, that does not indicate that such learning environment are most desirable for these groups students. In more traditional learning environments, they could also be withheld opportunities to develop themselves as autonomous self-directed learners.

According to some studies, boys have less successful educational careers compared to girls (e.g., Driessen & Van Langen, 2011; Epstein, Elwood, Hey, & Maw, 1998; Tyre, 2006). IL has also argued to be less suitable for boys in comparison to girls (Legewie & DiPrete, 2012). Research on gender differences with respect to IL has mainly focused on students' learning preferences. Johnson and Engelhard (1992) for example found that girls tend to prefer collaborative learning more than boys. Philbin, Meier, Huffman, and Boverie (1995) studied learning environment preferences of adult learners, and found men to prefer more traditional learning environments. These results suggest that boys may prefer traditional education whereas girls may prefer IL. Demirbas and Demirkan (2007), on the other hand, did not find any differences in learning style preferences between male and female learners. In their review, Severiens and Ten Dam (1997) described that gender differences in learning styles are quite small on average, but there is much variation across

studies. The few studies that have examined differential effects of IL for students with different social or ethnic backgrounds were mostly cross-sectional and focused mainly on achievement outcomes. Not much is known about the relation of IL for different groups with regard to long-term developments in both achievement and motivation.

THIS DISSERTATION

Through a variety of approaches, this dissertation aimed to examine the nature of motivational developments during upper primary school and the relations between these developments and achievement growth. It also aimed to investigate to what extent classroom composition and IL are related to developments in motivation and achievement for students that vary in gender, ethnic, and socio-economic background in order to examine whether the learning context may contribute to existing achievement gaps and to a potential decline in motivation during upper primary school.

CHAPTER OVERVIEW

First, motivational developments in upper primary school and the relation between developments in motivation and achievement were examined in **chapter 2**. In a sample of 722 students, it was examined how different aspect of motivation developed from third to sixth grade and how aspects of their motivation related to achievement in reading comprehension. Moreover, it was studied whether these motivational developments and relations between developments in motivation and achievement varied by gender, ethnicity, and socio-economic background.

Next, in **chapter 3**, it was examined among the same sample of students whether developments in motivation and achievement were related to ethnic and socio-economic classroom composition. It was taken into account whether

classroom composition effects varied by students' ethnicity, and socio-economic background

According to the specialization hypothesis (Driessen et al., 2003), classroom composition effects may occur because teachers adapt their practices to their student population. This could refer to the content of instruction, but as an extension of the specialization hypothesis, it may also refer to the instructional style that teachers adopt. To investigate whether the student population affects the instructional style teachers adopt, **chapter 4** explored teacher beliefs underlying their teaching practices. A subsample of nine teachers from schools that varied in student population and teaching practices participated in this study. It first examined teachers' personal beliefs toward autonomy-supportive teaching practices which are more typical to IL environments or toward more controlling teaching practices which are more typical to traditional education. It was furthermore examined how these beliefs, in combination with their perceptions of their student population affected their self-reported teaching practices. Other contextual pressures, such as formal regulations or school policies, were also included.

After taking teacher beliefs and their self-reported teaching practices into account, **chapter 5** focused on students' perceptions of their learning environment as well as their preferences with regard to the instructional style. In this chapter, five students of each of the nine teachers of chapter 4 were interviewed. Students' learning preferences toward aspects of traditional or innovative learning, as well as their perceptions of their actual classroom environment were examined. It was examined whether their learning preferences, their perceptions of the learning environment, as well as the alignment between those, differed by gender, and ethnic and socio-economic background.

In **chapter 6**, it was examined whether students' backgrounds indeed affected the extent to which they benefit from IL. In this chapter, the full sample of 722 students participated and it was studied how different aspects of IL (collaborative learning, authentic learning, and focusing on self-regulation)

related to developments in students' motivation and achievement in upper primary school and how this varied by students' gender, ethnicity, and socio-economic background.

Finally, in **chapter 7**, the main findings of the studies in this dissertation are summarized and discussed, and limitations as well as implications for future research and educational practice are considered.

METHODOLOGY

Participants. To address the research aims of this dissertation, 722 students from 37 classes of 25 schools across the Netherlands and their teachers participated. These students form a subsample from the third grade cohort of the triennial “COOL” study, a national Dutch cohort study on students' educational careers (Driessen, Mulder, Ledoux, Roeleveld, & van der Veen, 2009). Analyses showed that the students in this subsample were comparable to the students in the COOL study. Information on background characteristics, motivation and achievement of these students in grade three and grade six was available from the COOL study and for the sake of this dissertation, three additional waves of data were collected from this subsample. During each measurement wave, students and their teachers filled out questionnaires. Table 1 shows a schematic overview of the data collection.

Table 1.

Schematic overview of waves of data collection

Wave	Grade	Months
1 (COOL-1)	Half way through grade 3	January/February, 2008
2	Beginning of grade 5	September/October, 2009
3	Half way through grade 5	January/February/March, 2010
4	Beginning of grade 6	September/October, 2010
5 (COOL-2)	Half way through grade 6	January/February/March, 2011

For the two qualitative studies (chapter 4 and 5) a sample of nine teachers and 45 of their students at nine schools were selected from the larger sample based on their self-reported degree of innovative learning with intent that their scores represented maximum variability.

Measures. Questionnaires on motivation were administered to students and their teachers during regular class time. These included self-reports on task-orientation and academic self-efficacy, and teacher reports on students' investment. Although self-report measures have some limitations, as they are susceptible to self-presentation bias (Jobe, 2000), the internal nature of motivational beliefs makes self-reports one of the most suitable measures. Motivated behavior, however, is a visible part of motivation and was therefore assessed by teacher ratings. This scale included items that represent two key aspects, intensity and perseverance, of school investment. The task-orientation and school investment scales were formulated in Dutch. The self-efficacy scale was originally formulated in English and translated to Dutch for use in the COOL study. Moreover, all scales were validated for use in the COOL study (Driessen et al., 2009; Jungbluth, Roede, & Roeleveld, 2001). To check whether the motivational variables reflected the same construct over time and across groups, a series of multi-group factor analyses were performed, yielding satisfactory results. Students' achievement scores on tests from the Dutch National Institute for Educational Measurement (CITO) were provided by the schools. For the two qualitative studies, teachers' beliefs and self-reported teaching practices and students' perceptions of the learning environment and their learning preferences were assessed through in-depth interviews.

Analyses. Because of methodological advances, it is now possible to combine complex statistical techniques such as growth curve and autoregression modelling with multilevel techniques, making it easier to investigate how factors of the learning context are associated with developments in students' motivation and achievement growth (Reynolds, Sammons, De Fraine, Townsend, & Van Damme, 2011). These techniques also allow for examining

group differences. These techniques were combined in this dissertation and complemented with qualitative studies to also provide a more in-depth understanding of teacher and student perceptions of the learning environment.

SCHEMATIC OVERVIEW

Figure 1 provides an schematic overview of the chapters in this dissertation.

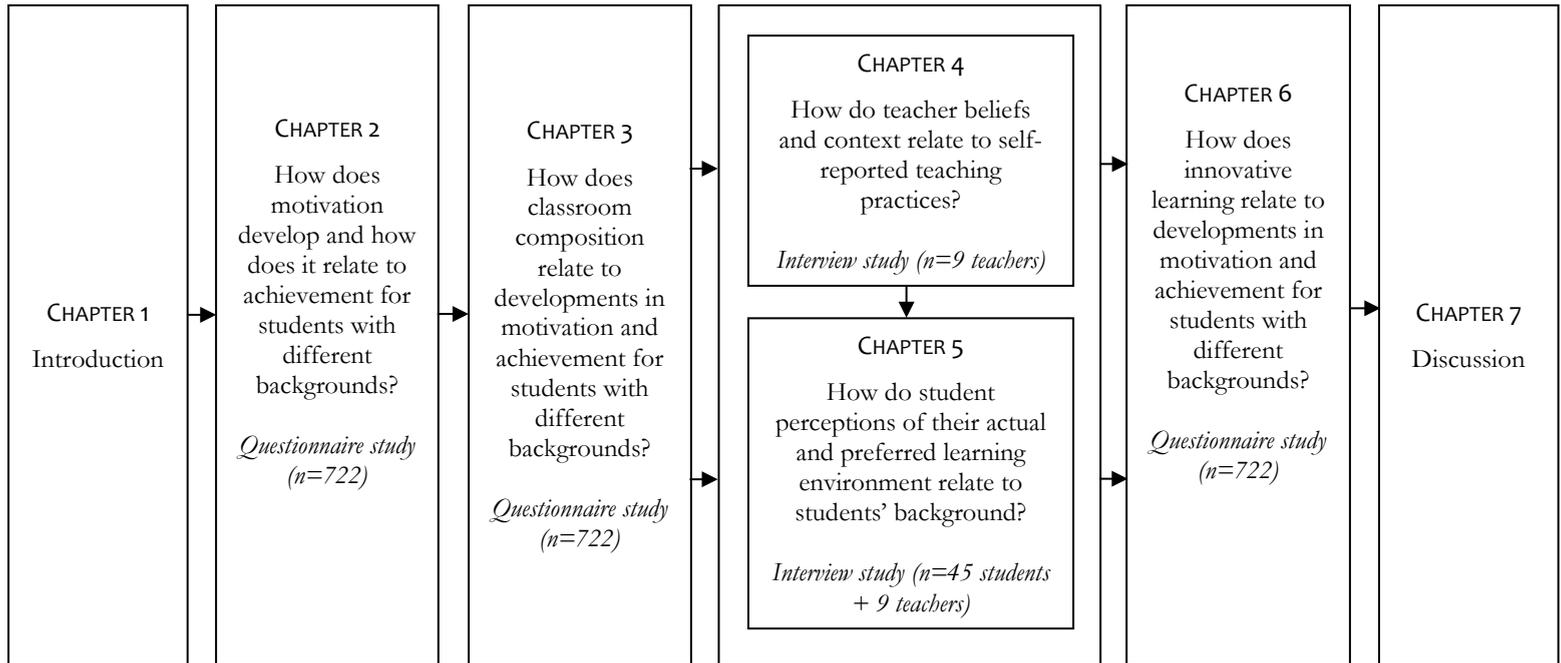


Figure 1. Schematic overview of this dissertation